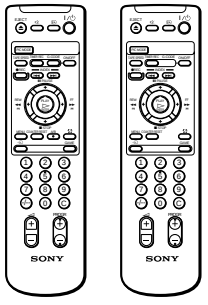
Self Diagnosis Supported model

# SERVICE MANUAL BC-4A CHASSIS

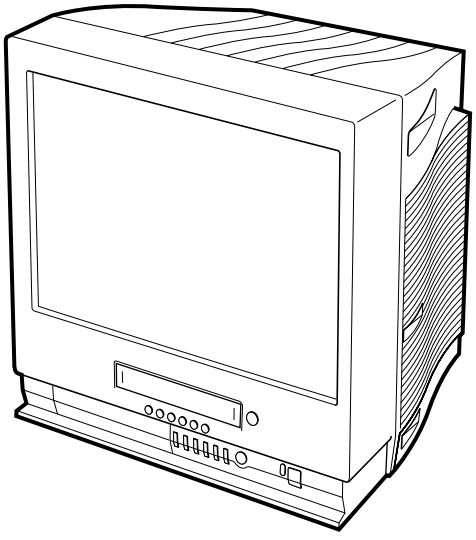
| MODEL | COMMANDER | DEST. | CHASSIS NO. |
|---|---|---|---|
| KV-VF14M40 | RM-956 | GE | SCC-U31A-A |
| KV-VF14M70 | RM-956 | ME | SCC-P11B-A |
| KV-VF14M70 | RM-956 | E | SCC-P10B-A |
| KV-VF14M77 | RM-955 | HK | SCC-P09C-A |

| MODEL | COMMANDER | DEST. | CHASSIS NO. |
|---|---|---|---|

- Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENTS VI for Mechanical Adjustments. (9-921-647-11)




RM-955 RM-956



VHS
PAL NTSC

G-CODE® (VF14M77 ONLY)

MICROFILM

∗ Please file according to model size. ....□

TRINITRON® COLOR VIDEO TV

SONY®

# SPECIFICATIONS

### TV Section

| | |
|---|---|
| Television system | B/G, I, D/K, M |
| Color system | PAL/SECAM and NTSC3.58/NTSC4.43 |
| Bilingual system | NICAM bilingual I |
| Channel coverage | See “Receivable channels and channel display” |
| Picture tube | Trinitron 14 inches (approx. 34 cm measured diagonally) |
| Antenna in | 75-ohm antenna socket for VHF/UHF |

### Video Section

| | |
|---|---|
| Format | VHS standard |
| Video recording system | Rotary 2-head helical scanning system |
| Audio recording system | Monaural |
| Video signal | PAL/MESECAM/ NTSC |
| Tape speed | PAL/MESECAM<br>SP: 23.39 mm/sec.<br>LP: 11.70 mm/sec.<br>NTSC<br>SP: 33.35 mm/sec.<br>EP: 11.11 mm/sec. |
| Maximum recording time | PAL/MESECAM<br>SP: 240 minutes with E-240<br>LP: 480 minutes with E-240<br>NTSC<br>SP: 180 minutes with T-180<br>EP: 540 minutes with T-180 |

### Inputs and Outputs

| | |
|---|---|
| Inputs | 1, 2/GAME IN<br>(video): phono jack<br>1 Vp-p, 75 ohms, unbalanced, sync negative<br>♪ (audio): phono jack<br>Input level: 500 mVrms |
| Headphones jack | Minijack |

### General

| | |
|---|---|
| Clock | Quartz locked |
| Power requirements | 110-240 V AC, 50/60Hz |
| Power consumption | 85W |
| Operating temperature | 5º C to 40º C (41º F to 104º F) |
| Storage temperature | –20º C to 60º C (–4º F to 140º F) |
| Dimensions | 375 × 390 × 409 mm |
| Mass | 16 kg |

### Supplied accessories

Remote control
Two R6 (size AA) batteries
Stabilizer band
Two clamps
Two wood screws
AC plug adaptor (E/ME model)
These operating intructions

Design and specifications are subject to change without notice.

## Receivable channels and channel display

| System | Area | Channel coverage | Channel display |
|---|---|---|---|
| B/G, H | Middle East/Asia | E-2 to E-12<br>E-21 to E-69 | C02 to C12<br>C21 to C69 |
| | Indonesia | 1A<br>2 to 11 | C01<br>C03 to C12 |
| | Morocco | M-4 to M-7<br>M-8 to M-10 | C70 to C73<br>C08 to C10 |
| | CATV | S-01 to S-05<br>S-1 to S-41 | S42 to S46<br>S01 to S41 |
| I | Hong Kong/<br>United Kingdom | B-21 to B-69 | C21 to C69 |
| | Ireland | A, B, C,....J | C01 to C10 |
| | South Africa | 4 to 13<br>21 to 68 | C04 to C13<br>C21 to C68 |
| | Angola | 1<br>2 to 3 | C00<br>C02 to C03 |
| | CATV | S-01 to S-05<br>S-1 to S41 | S42 to S46<br>S01 to S41 |
| D/K, K1 | East European<br>coutries | R-1 to R-12<br>R-21 to R-60 | C01 to C12<br>C21 to C60 |
| | China | C-1<br>C-2<br>C-3<br>C-4<br>C-5<br>C-6<br>C-7 to C-12<br>C-13 to C-24<br>C-25 to C-47<br>C-48 to C-57 | C01<br>C02<br>C13<br>C03<br>C04<br>C14<br>C06 to C11<br>C21 to C32<br>C38 to C60<br>C61 to C70 |
| | Ivory Coast | 1 to 3 | C71 to C73 |
| | CATV | S-1 to S-39 | S01 to S39 |
| M | America | A-2 to A-13<br>A-14 to A-69 | C02 to C13<br>C14 to C69 |
| | CATV | A-8<br>A-7<br>A-6<br>A-5 to A-1<br>A to E<br>F to W+28<br>W+29 to W+58 | S01<br>S05<br>S06<br>S95 to S99<br>S14 to S18<br>S19 to S64<br>S65 to S94 |

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**CAUTION**

**SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.**

**SAFETY-RELATED COMPONENT WARNING!!**

**COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.**

# SELF DIAGNOSTIC FUNCTION

## 1. OUTLINE

- The units in this manual contain a self-diagnostic function.
- If an error occurs, the STANDBY lamp will automatically begin to flash.
  The number of times the lamp flashes translates to a probable source of the problem. A definition of the STANDBY lamp flash indicators is listed in the instruction manual for the user's knowledge and reference.
- If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

## 2. DIAGNOSTIC TEST INDICATORS

- When an errors occurs, the STANDBY lamp will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the lamp will identify the first of the problem areas.
- Result for all of the following diagnostic items are displayed on screen. No error has occured if the screen displays a "0".

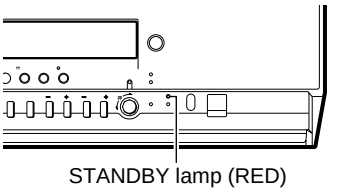
| Diagnostic Item Description | No. of times STANDBY lamp flashes | Self-diagnostic display/Diagnostic result | Probable Cause Location | Detected Symptoms |
|---|---|---|---|---|
| • Power does not turn on | Does not light | — | • Power cord is not plugged in.<br>• Fuse is burned out F901 | • Power does not come on.<br>• No power is supplied to the TV.<br>• AC power supply is faulty. |
| • +B overcurrent (OCP) or overvoltage (OVP) | 2 times | 2 : 0 or<br>2 : 1 ┐<br>4 : 1 ┘ at the same time<br>(Note 1) | • FBT<br>• Q802 (H OUT) shorted | • On standby state.<br>• Load on power line is shorted<br>(at the same time 4 : 1 on display). |
| • Vertical deflection stopped | 4 times | 4 : 0<br>or<br>4 : 1 | • IC501<br>• IC301 ⑭ pin<br>• IC606<br>• Q802 (H OUT) shorted<br>• Q803<br>• Q608<br>• R803 open | • Has entered standby state after horizontal raster.<br>• Vertical deflection pulse is stopped.<br>• Horizontal deflection stopped.<br>• Power line is shorted or power supply is stopped. |
| • White balance failure (no PICTURE) | 5 times | 5 : 0<br>or<br>5 : 1 | • CRT<br>• IC301<br>• IC701 - IC703, Q701 (CV board)<br>• G2 is improperly adjusted. (Note 2) | • No raster is generated.<br>• CRT cathode current detection reference pulse output is small. |

Note 1: If a + B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.
The symptom that is diagnosed first by the microcontroller is displayed on the screen.
Note 2: Refer to screen (G2) Adjustment in section 3-4 of this manual.

• VCR EMG code List

| Code | Contents | Code | Contents |
|---|---|---|---|
| 00h | NO EMG | 30h | Capstan FG NG at initial |
| 10h | CAM encode NG during unloading | 31h | Capstan FG NG |
| 11h | CAM encode NG during unloading | 40h | Drum FG NG |
| 12h | CAM encode NG at intial | 41h | Drum FG NG at initial |
| 20h | T reel NG during unloading | 42h | Drum FG NG |
| 21h | S reel FG NG | 43h | Drum PG NG |
| 22h | T reel FG NG | 44h | Drum PG NG |
| 23h | S reel FG NG | 50h | DEW |
| 24h | T reel FG NG at initial | 60h | FL NG |
| 25h | S reel FG NG at initial | 70h | DEW eject NG |

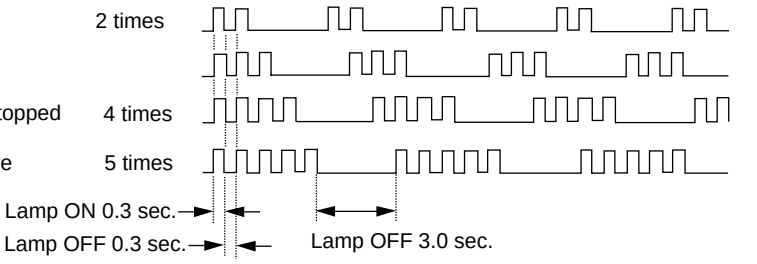
## 3. DISPLAY OF STANDBY LIGHT FLASH COUNT



STANDBY lamp (RED)

* One flash count is not used for self-diagnostic.

| < Diagnostic Item > | < Flash Count > |
|---|---|
| • +B OCP/OVP | 2 times |
| • Vertical deflection stopped | 4 times |
| • White balance failure | 5 times |




STOPPING THE STANDBY FLASH

• Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY lamp from flashing.

## 4. SELF-DIAGNOSTIC SCREEN DISPLAY

• For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurances of failure for confirmation on the screen:

**[To Bring Up Screen Test]**

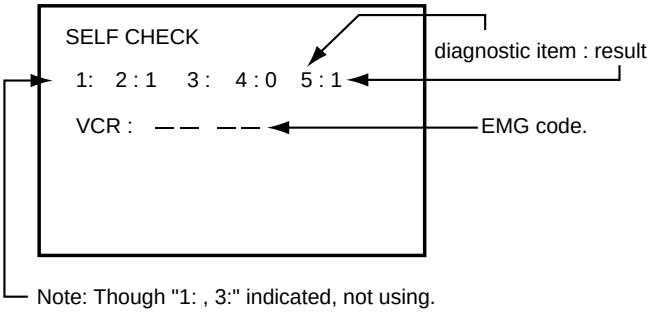
• In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Screen display ➡ channel 5 ➡ Sound volume - ➡ Power ON ⏻

i+ ⇧

Note that this differs from entering the service mode (mode volume +).

**Self-Diagnosis screen display**




Numeral "0" means that no fault has been detected.

Numeral "1" means a fault has been detected.

Note: Though "1: , 3:" indicated, not using.

## 5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

• Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

• Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

**[Clearing the result display]**

• To clear the result display to “0”, press buttons on the remote commander sequentially as shown below when the diagnostic screen is being displayed.

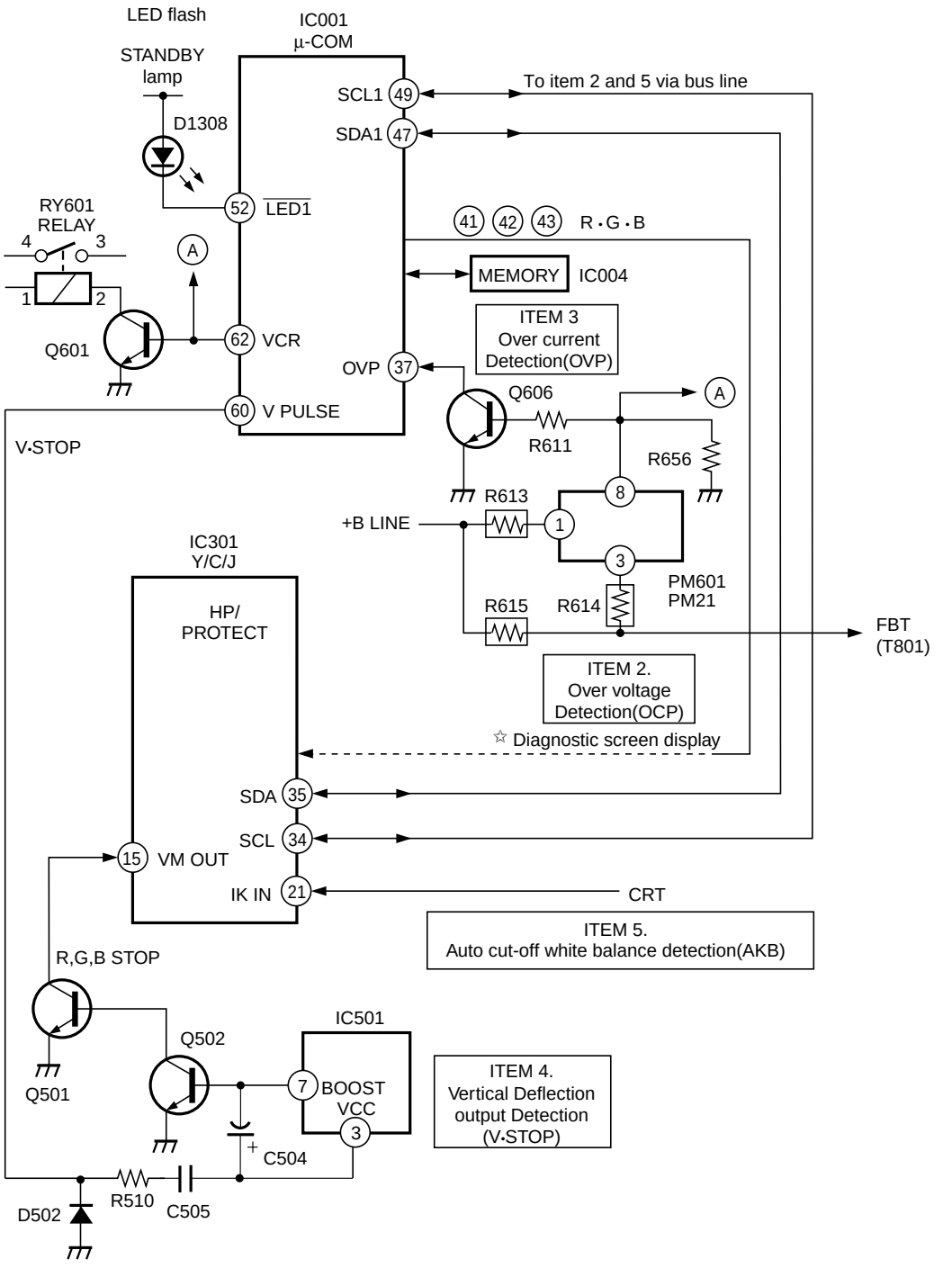
• Pay attention when perform by the service mode, other all electric adjustment data will be rewrite.

Channel 8 ➡ 0

**[Quitting Self-diagnostic screen]**

• To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

## 6. SELF-DIAGNOSTIC CIRCUIT




| | |
|---|---|
| +B overcurrent | Owing to current increase voltage of R615 decrease and that it make PM601 pin ⑧ to become LOW and OFF RY601. |
| +B over voltage | When +B voltage become more than 142.5V, PM601 ⑧ pin become LOW and RY601 OFF. |
| Vertical deflection stopped | Detect Vertical deflection Pulse lost by IC001 ⑥⓪ pin of micro computer.<br>Mute the picture at ⑮ pin of IC301 that performed by Y/C/J. |
| White balance | Detect when R.G.B. output wrong level balance of automatic white balance detecting standard pulse which detect cathode current, or which become low almost. |

SECTION 1
GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

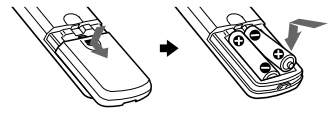
Getting Started

# Step 1: Preparation

### Check the supplied accessories

When you have taken everything out of the carton, check that you have these items:
- Remote control
- Two R6 (size AA) batteries
- Stabilizer band
- Two clamps
- Two wood screws
- AC plug adaptor
- These operating instructions

### Insert the batteries into the remote control



**Note**
- Do not use old batteries or different types of batteries together.

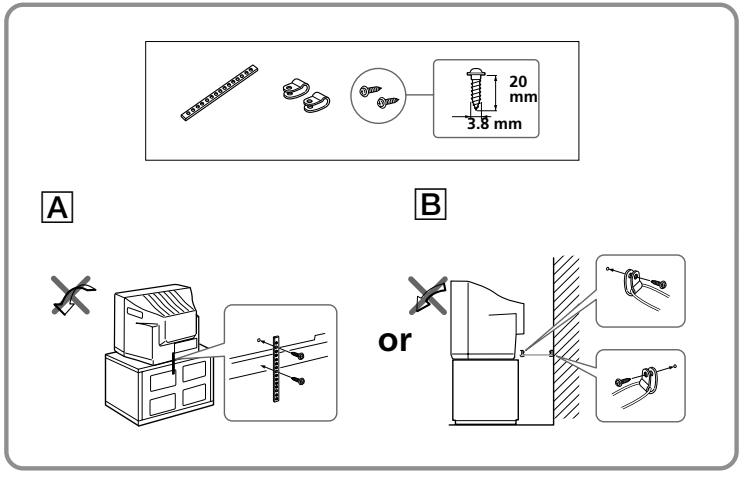
# Step 2: Securing the video TV (not used for this model)

To prevent the video TV from falling, secure it using one of the following methods:

**A With the supplied screws, attach the stabilizer band to the TV stand and to the rear of the video TV using the existing hole.**

**or**

**B Pass a cord or chain through the clamps and secure them to the rear of the video TV and a wall or pillar.**




Getting Started

– 8 –

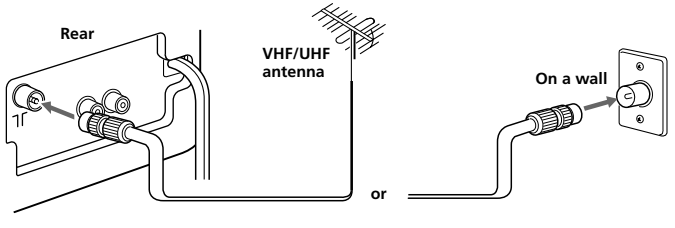
# Step 3: Connecting the antenna

For better TV reception and clear recordings, connect an outdoor antenna to your video TV.

## Connecting an outdoor antenna

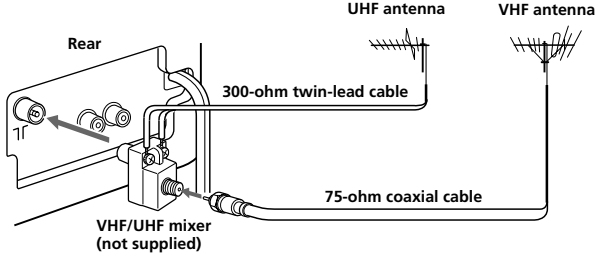
### To connect a VHF antenna or a combination VHF/UHF antenna—75-ohm coaxial cable (round)

Attach an IEC antenna connector to the 75-ohm coaxial cable.
Plug the connector into the ⅂ (antenna) socket of the video TV.




### To connect both VHF and UHF antennas

Attach the antenna cable ends to the VHF/UHF mixer (not supplied).
Plug the mixer into the ⅂ (antenna) socket of the video TV.



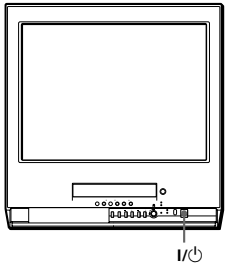

– 9 –

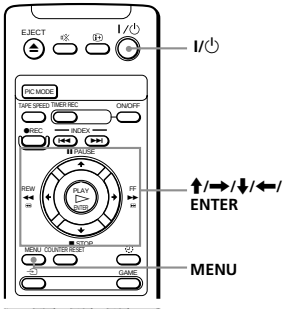


# Step 4: Selecting the language



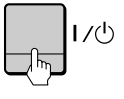
You can change the menu and on-screen information language to Chinese.



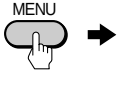



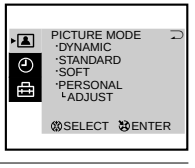

**1** Press I/⏻ to turn on the video TV.

When the TV is in standby mode (the ⏻ indicator on the video TV is lit in red), press I/⏻, PROGR +/– or a number button on the remote control.

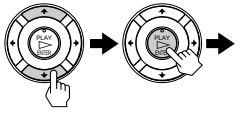



**2** Press MENU.




**3** Press ↑ or ↓ to select 🧰, then press ENTER.

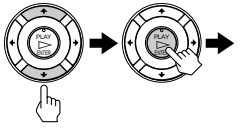


continued

***Step 4: Selecting the language (continued)***

**4** Press ↑ or ↓ to select LANGUAGE/ 語言, then press ENTER.

The selected item turns red.



**5** Press ↑ or ↓ to select 中文, then press ENTER.

The menu language changes to Chinese.

**To return to the normal screen**

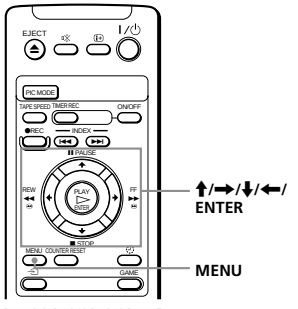
Press MENU.



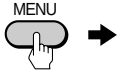


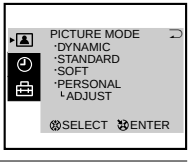
# Step 5: Setting the clock

You need to set the clock to use timer recording, Quick-Timer recording and on-timer functions.

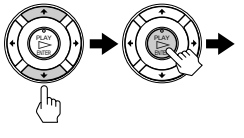


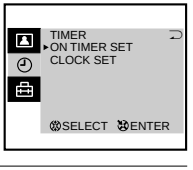

**1** Press MENU.



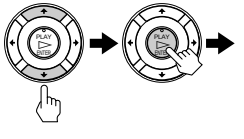



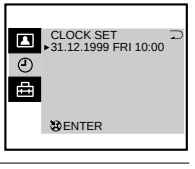

**2** Press ↑ or ↓ to select 🕘, then press ENTER.






**3** Press ↑ or ↓ to select CLOCK SET , then press ENTER.



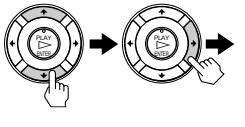


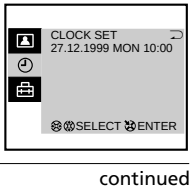

**4** Press ENTER.

The day section turns red.

**5** Press ↑ or ↓ to set the day, then press →.

The month section turns red.






continued

### *Step 5: Setting the clock (continued)*

**6** Press ↑, ↓ or → to set the month, year, hour and minutes in the same way as in step **5**, then press ENTER.

The clock starts working.

#### To return to the normal screen

Press MENU.

#### If you have made a mistake while setting the clock

Press ← to go back to the item to be changed and set the correct digits using ↑ or ↓, then press →.

**Note**

- If power is interrupted or you disconnect the AC power cord, you have to re-set the clock.



# Step 6: Setting the channels

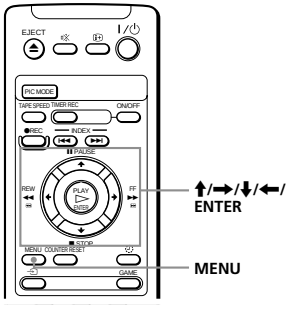


## Presetting channels automatically

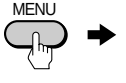
You can preset up to 100 channels.

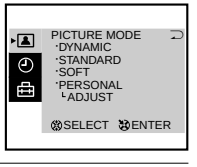
Automatic presetting is the easiest way to setup your video TV if you want to preset all receivable channels at once.

To preset the channels manually, see page 30.

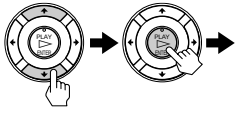



**1** Press MENU.

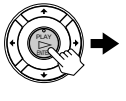


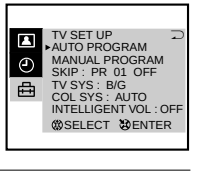




**2** Press ↑ or ↓ to select 🧰, then press ENTER.



**3** Make sure TV SET UP is selected, then press ENTER.

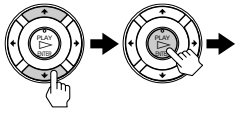


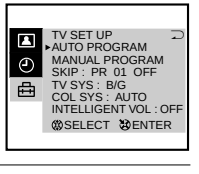



**4** Press ↑ or ↓ to select TV SYS, then press ENTER.

The selected item turns red.

Press ↑ or ↓ to select the TV system (B/G, I, D/K or M) and press ENTER.

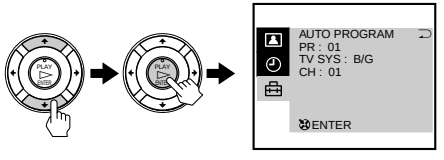





continued

***Step 6: Setting the channels (continued)***

**5** Press ↑ or ↓ to select AUTO PROGRAM, then press ENTER.

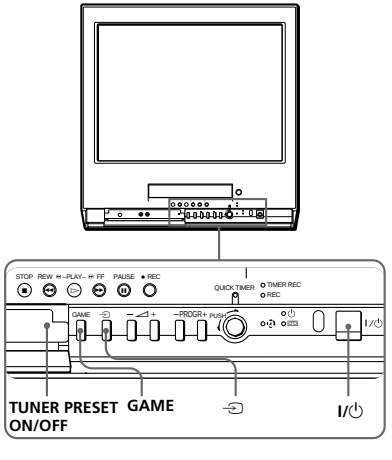



Presetting starts from program position 1. The preset program and channel numbers are displayed on the screen in sequence.
When presetting is finished, program position 1 appears again. All available channels are now stored on successive number buttons.

**Tip**

- To stop automatic channel presetting, press MENU.

## Presetting channels automatically using the TUNER PRESET ON/OFF button on the video TV



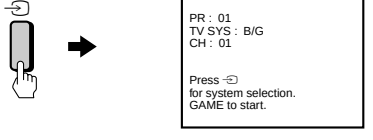

**1** Press I/⏻ to turn on the video TV.

When the TV is in standby mode (the ⏻ indicator on the video TV is lit in red), press I/⏻ , PROGR +/– or a number button on the remote control.

**2** Press TUNER PRESET ON/OFF with a pointed object.

Do not use an item (such as a pencil) that might break off when inserted.

**3** Press ⏎ to select the TV system of the channels which you want to preset.



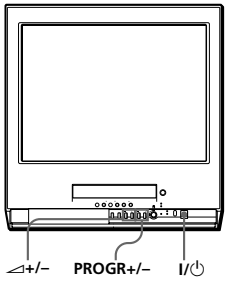

**4** Press GAME.

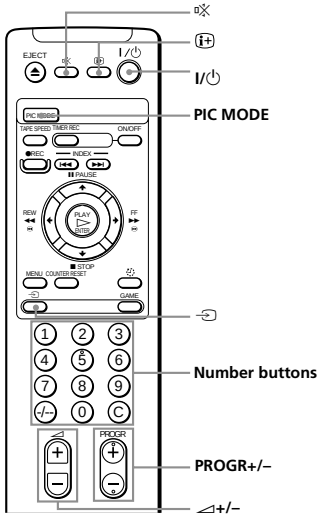
Presetting starts from program position 1. The preset program and channel numbers are displayed on the screen in sequence.

When presetting is finished, program position 1 appears again. All available channels are now stored on successive number buttons.

# Watching the TV

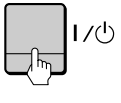
This section explains various functions used while watching the TV. Most operations can be done using the remote control.



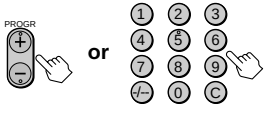

**1** Press I/⏻ to turn on the video TV.

When the TV is in standby mode (the ⏻ indicator on the video TV is lit in red), press I/⏻ on the remote control.




**2** Press PROGR +/– or the number buttons to select the TV channel.

For double digit numbers, press -/--, then the numbers (e.g., for 25, press -/--, then 2 and 5).




**Note**

- You can also select the channel number directly with the number buttons. Press C (once for regular channels, twice for cable channels), then the desired number buttons.

## Additional tasks

| To | Press |
|---|---|
| Turn off temporarily | I/⏻ on the remote control.<br>The ⏻ indicator on the video TV lights up in red. |
| Turn off the main power | I/⏻ on the video TV.<br>The ⏻ indicator on the video TV lights up in orange. |
| Adjust the volume | +/–. |
| Mute the sound | . |
| Watch the video input (from a connected VCR, camcorder, etc.) | to select "1" or "2" (see page 48).<br>To return to the TV screen, press again. |

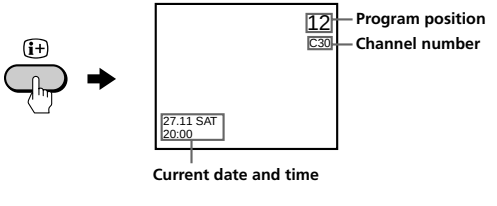
## Selecting the picture mode

Press PIC MODE repeatedly until the desired picture mode is selected.

| Select | To |
|---|---|
| DYNAMIC | receive high contrast pictures. |
| STANDARD | receive normal contrast pictures. |
| SOFT | receive low contrast pictures. |
| PERSONAL | receive the latest picture settings from the ADJUST option in the PICTURE MODE menu (see page 35). |

## Displaying on-screen information

Press to display the following on-screen information.
To have the program number and channel number stay on the screen, press again.
To make the information disappear, press until no information is displayed on the screen.



### Additional tasks

| To | Press |
|---|---|
| Turn off temporarily | I/⏻ on the remote control.<br>The ⏻ indicator on the video TV lights up in red. |
| Turn off the main power | I/⏻ on the video TV.<br>The indicator on the video TV lights up in orange. |
| Adjust the volume | +/–. |
| Mute the sound | . |
| Watch the video input (from a connected VCR, camcorder, etc.) | to select "1" or "2"(see page 53).<br>To return to the TV screen, press again. |

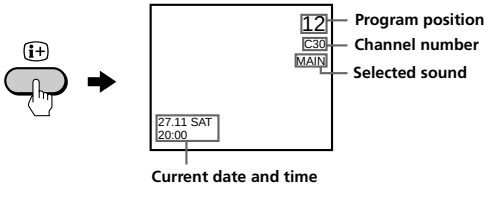
### Selecting the picture mode

Press PIC MODE repeatedly until the desired picture mode is selected.

| Select | To |
|---|---|
| DYNAMIC | receive high contrast pictures. |
| STANDARD | receive normal contrast pictures. |
| SOFT | receive low contrast pictures. |
| PERSONAL | receive the latest picture settings from the ADJUST option in the PICTURE MODE menu (see page 39). |

### Displaying on-screen informatioN (KV-VF14M77 only)

Press to display the following on-screen information.
To have the program number and channel number stay on the screen, press again.
To make the information disappear, press until no information is displayed on the screen.

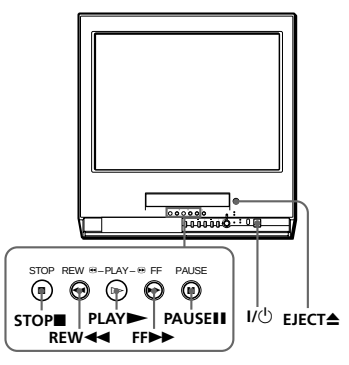


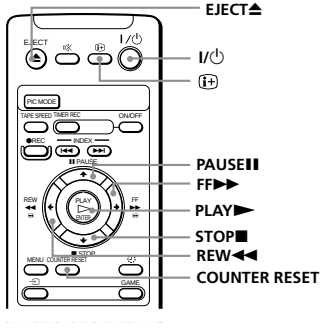





# Playing a tape

This section shows you how to play a tape. Other convenient functions you can use while playing a tape are explained in "Additional Operations".




**1** Press I/⏻ to turn on the video TV.

When the TV is in standby mode (the ⏻ indicator on the video TV is lit in red), skip this step.

**2** Insert a cassette.

If you insert a cassette with its safety tab removed, playback starts automatically.

**3** Press PLAY ►.

Playback starts. On-screen information is displayed for a few seconds.

**Note**

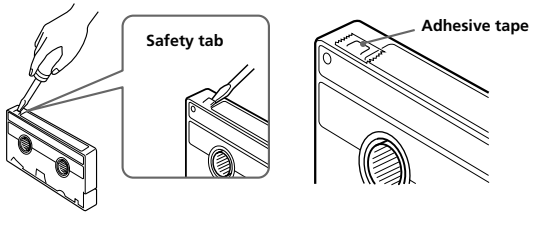
- The picture's color may be affected when playing a MESECAM-recorded tape in the LP mode.

### Additional tasks

| To | Press |
|---|---|
| stop playback | STOP ■.<br>The video TV goes back to the normal TV picture. |
| stop playback for a moment | PAUSE ❚❚.<br>Press PAUSE ❚❚ again or press PLAY ► to resume playback.<br>If you leave your video TV in pause mode, normal playback resumes after about 5 minutes to prevent tape damage. |
| search a tape at high speed | REW ◄◄ (rewind) or FF ►► (fast-forward) during playback.<br>To resume normal playback, press PLAY ►. |
| fast-forward the tape | STOP ■, then press FF ►►. |
| rewind the tape | STOP ■, then press REW ◄◄. |
| view the picture in fast-forward or rewind mode | and hold FF ►► during fast-forward or REW ◄◄ during rewind.<br>When you release the button, fast-forward or rewind mode is resumed. |
| eject a cassette | EJECT ⏏.<br>You can eject the cassette even if the power is off. |

### Protecting your cassette against accidental erasure

To prevent accidental erasure, break off the safety tab as illustrated. To record on a cassette without a safety tab, simply cover the tab hole with adhesive tape.



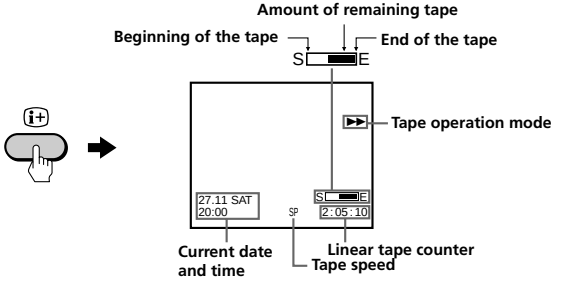

continued





## Displaying on-screen information

Press i+ to display the following on-screen information. To show only the amount of remaining tape and the linear tape counter on the screen, press i+ again.
To make the information disappear, press i+ until no information is displayed on the screen.

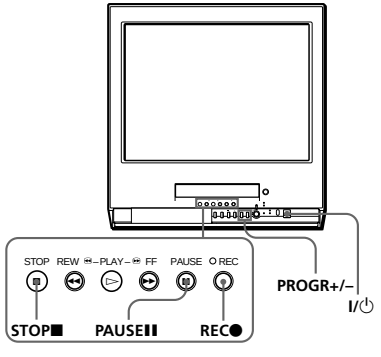


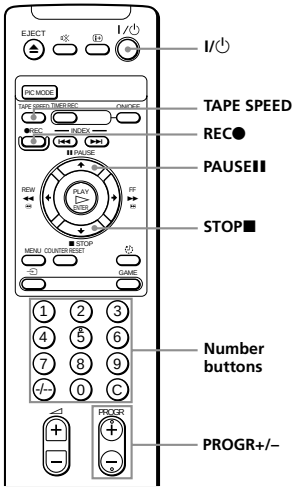

### Resetting the tape counter

The tape counter helps you to locate a certain scene after playback. Press COUNTER RESET on the remote control to set the counter to "0:00:00" before playing a tape. The tape counter is automatically reset to zero whenever a cassette is inserted. The video TV keeps counting the length of the tape being played. Note, however, that the tape counter does not count the portions that do not contain any recordings.

# Recording TV programs

## Recording TV programs



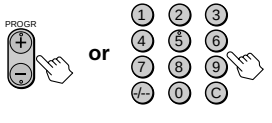

**1** Press I/⏻ to turn on the video TV.

If the TV is in standby mode (the ⏻ indicator on the video TV is lit in red), the video TV will turn on automatically when a cassette is inserted.

**2** Insert a cassette with a safety tab.

**3** Press PROGR+/– or the number buttons to select the program position.

For double digit numbers, press -/--, then press the numbers (e.g., for 25, press -/--, then 2 and 5).




**4** Press TAPE SPEED to select the tape speed.

For details about the tape speed, see "Selecting the tape speed" on page 21.

continued





**5** Press REC ●.

The REC indicator lights up and recording begins.

**Note**

- You can also select the channel number directly with the number buttons. Press C (once for regular channels, twice for cable channels), then the desired number buttons.

### To stop recording

Press STOP ■.
When the tape reaches the end, the video TV rewinds the tape automatically to the beginning, then stops. This function does not work when the power of the video TV is off.

### To pause recording

You can cut out an unwanted scene during recording with this button.

**1** Press PAUSE ❚❚ when an unwanted scene appears on the screen. Recording pauses.

**2** Press PAUSE ❚❚ again to release the pause mode at the end of the unwanted scene.
Recording resumes from the point set in step **1**.

When the recording pause mode lasts for about 5 minutes, the video TV stops recording to prevent tape damage.

### Recording with the TV off

Press I/⏻ on the video TV.
The video TV is turned off and the ⏺ indicator lights up.
The video TV continues recording.

## Selecting the tape speed

The chart below shows the recording/playback time available in each mode.

**PAL, MESECAM**

| Cassette tape | Tape speed setting | |
|---|---|---|
| | SP mode | LP mode |
| E-30 | 30 min. | 1 hr. |
| E-60 | 1 hr. | 2 hrs. |
| E-90 | 1 hr 30 min. | 3 hrs. |
| E-120 | 2 hrs. | 4 hrs. |
| E-150 | 2 hrs 30 min. | 5 hrs. |
| E-180 | 3 hrs. | 6 hrs. |
| E-195 | 3 hrs 15 min. | 6 hrs 30 min. |
| E-210 | 3 hrs 30 min. | 7 hrs. |
| E-240 | 4 hrs. | 8 hrs. |

**NTSC**

| Cassette tape | Tape speed setting | |
|---|---|---|
| | SP mode | EP mode |
| T-30 | 30 min. | 1 hr 30 min. |
| T-60 | 1 hr. | 3 hrs. |
| T-120 | 2 hrs. | 6 hrs. |
| T-160 | 2 hrs 40 min. | 8 hrs. |
| T-180 | 3 hrs. | 9 hrs. |

**Notes**

- In the SP mode, the tape runs twice as fast as the LP mode, and three times as fast as the EP mode.
- When a PAL format cassette is used with the NTSC system for recording, the actual recording time is shorter than the standard recording time stipulated on the cassette.



continued



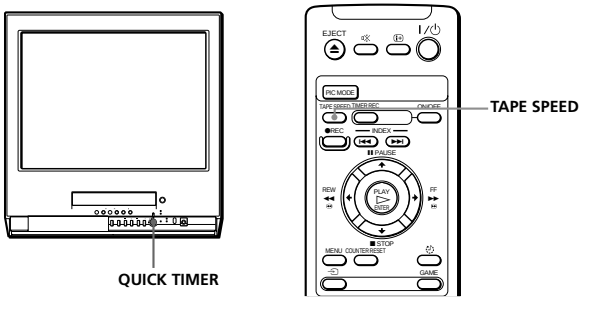


## Recording using QUICK-TIMER

The Quick-Timer recording function allows you to preset your video TV to record one program within a 24-hour period. For setting the Quick-Timer, use QUICK TIMER on the video TV.

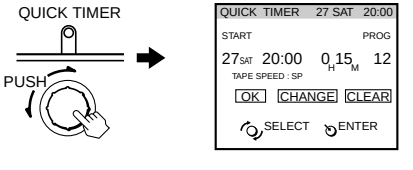
### Before you begin

- Make sure that the clock is set correctly. If it is not, see "Setting the clock" on page 9.
- Make sure that the loaded cassette has its safety tab intact.
- Make sure that the video TV does not enter the timer recording standby mode (the TIMER REC indicator on the video TV should not be lit.)




**1** Press QUICK TIMER.

When the TV is in standby mode (the ⏻ indicator on the video TV is lit in red), the power is turned on automatically.

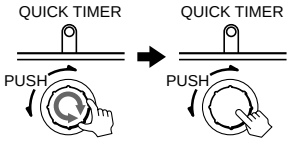



**2** Press TAPE SPEED to select the tape speed, SP or LP.

EP cannot be selected when making timer recordings.

**3** Turn QUICK TIMER to set the hour of the start time, then press QUICK TIMER.

The hour is set and the minute of the start time turns red.

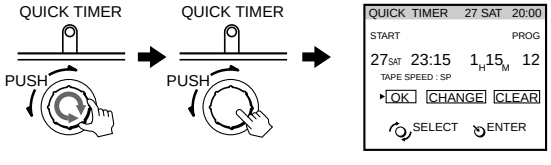



**4** Turn QUICK TIMER to set the minute of the start time, then press QUICK TIMER.

**5** Use the QUICK TIMER dial to set the recording time period and program position in the same way as in step **3**.

**6** Turn QUICK TIMER to move the cursor to OK, then press QUICK TIMER.

The Quick Timer indicator lights up and the video TV enters the timer recording standby mode.






continued



## *Recording TV programs (continued)*

**The QUICK TIMER button changes the following when turned clockwise or counterclockwise**

- When setting the start time:
  The hour increases or decreases by one hour.
  The minutes increase or decrease by one minute.
- The recording time period:
  Increases or decreases by 15 minutes.
- The program position changes as follows:
  1... ↔ 8... ↔ 12... ↔ 1 ↔ 2 ↔ 0 ↔ 1

**If the QUICK TIMER button is pressed**

- When the Quick Timer is not set:
  The display for setting the Quick Timer appears.
- When the Quick Timer is set:
  The display for checking the Quick Timer appears.
- When the clock is not set:
  The CLOCK SET display appears.

**Note**

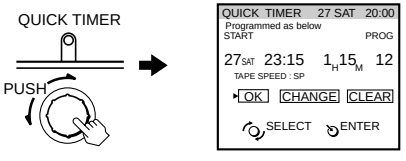
- When you turn QUICK TIMER to move the cursor to OK and then press it, one of the following messages may appear depending on the cassette used. If a message appears, the recording is canceled.
  - Put in a tape. The program recording is canceled.
  - Put in a tape with safety tab. The program recording is canceled.
  - Tape ran out. The program recording is canceled.

  Insert a cassette for recording, rewind the tape and press QUICK TIMER again.

### Changing or canceling the Quick Timer settings

**1** Press QUICK TIMER.

The QUICK TIMER display appears.




**2** Change the settings:

(1) Turn QUICK TIMER to move the cursor to CHANGE, then press QUICK TIMER.

(2) Change the settings according to steps **2** through **7** of "Recording using QUICK-TIMER" on pages 22 and 23.

**To cancel the Quick Timer settings**

Turn QUICK TIMER to move the cursor to CLEAR, then press QUICK TIMER.

**Note**

• You cannot cancel the Quick Timer settings with the remote control.



continued





## Recording TV programs using the G-CODE system

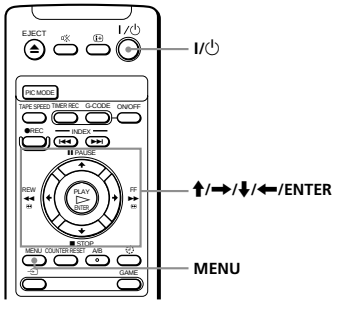
The G-CODE system allows you to simplify the task of programming your video TV to make recordings with the timer. Whenever you want to record a TV program, all you need to do is look up the program's G-CODE number, a number assigned to each program published in the TV section of most newspapers and cable TV listings. Then, just enter the tape speed, sound mode, and the G-CODE number of the program that you want and the video TV is automatically programmed to record that show.

### Setting up the G-CODE system

Setting up your video TV involves coordinating the program number (the number you turn to on your video TV to watch a program) with the guide channel number (the number that's assigned to that channel in your program guide). For a listing of the guide channel numbers, look in a program guide for your area that features G-CODE numbers.

**Before you begin**

• When the TV is in standby mode (the ⏻ indicator on the video TV is lit in red), press **I**/⏻ , PROGR +/– or a number button on the remote control.

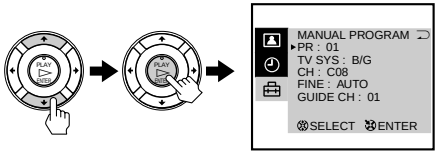


**1** Press MENU.

**2** Press ↑ or ↓ to select 🧰 , then press ENTER.

**3** Make sure TV SET UP is selected, then press ENTER.

**4** Press ↑ or ↓ to select MANUAL PROGRAM, then press ENTER.

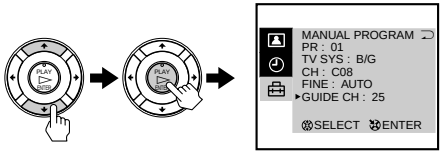



**5** Make sure PR is selected, then press ENTER.

**6** Press ↑ or ↓ to display the program number to which you want to assign a guide channel number, then press ENTER.

**7** Press ↑ or ↓ to select GUIDE CH, then press ENTER.

**8** Press ↑ or ↓ to select the guide channel number listed in a program guide for your area, then press ENTER.




**9** Press ↑ or ↓ to select PR, then press ENTER and repeat steps **6** through **8** to set the guide channel number of other channels.

### To return to the normal screen

Press MENU.

**Note**

- Do not change the CH (channel) settings here.
  If you want to reassign the channel settings to the program numbers, see "Presetting channels manually" on page 34.

continued

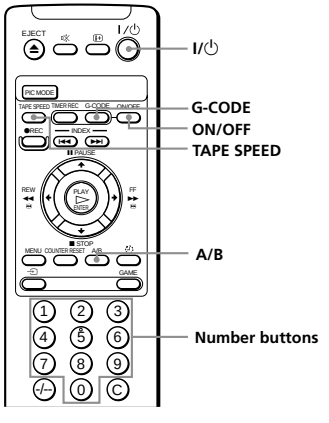




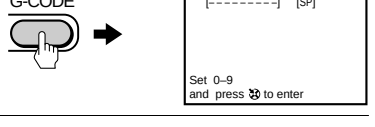
## Recording TV programs using the G-CODE system

**Before you begin**

- When the TV is in standby mode (the ⏻ indicator on the video TV is lit in red), press I/⏻ , PROGR +/– or a number button on the remote control.
- Make sure that the clock is set correctly. If it is not, see "Setting the clock" on page 9.
- Make sure that the loaded cassette has its safety tab intact.
- Make sure that the video TV does not enter the timer recording standby mode (the QUICK TIMER indicator on the video TV should not be lit).



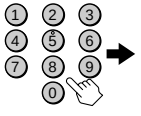

**1** Press the G-CODE button.

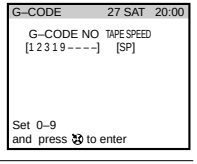


**2** Press TAPE SPEED to select the tape speed, SP or LP.

EP cannot be selected when making timer recordings.

**3** Press the number buttons to enter the program's G-CODE number.

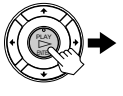


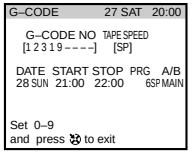



**4** Press ENTER.

The date, start and stop times, program position, tape speed and sound mode appears on the TV screen.

If you want to change the sound mode, press A/B to select MAIN or SUB.






**5** Repeat steps **2** through **4** to enter other settings.

You can set up to five programs in a one month period using both the G-CODE setting and the timer setting.

**6** Press ENTER.

The TIMER REC indicator on the front of the video TV lights up and the video TV enters timer recording standby mode.

### To stop timer recording

Press ON/OFF.

### If you make a mistake entering the G-CODE number

Press ← and re-enter the correct number.

### To use the video TV before timer recording starts

See page 31.

### To check/add/change/cancel the timer settings

See page 32.

continued





## Recording TV programs using the timer

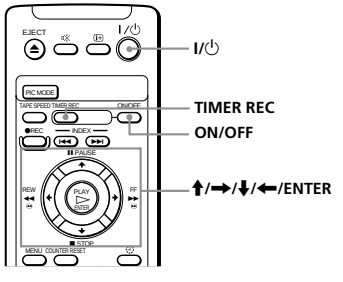
You can preset up to five programs within a one-month period.

**Before you begin**

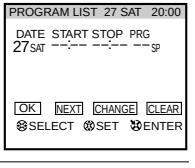
- When the TV is in standby mode (the ⏻ indicator on the video TV is lit in red), press **I**/⏻ , PROGR +/– or a number button on the remote control.
- Make sure that the clock is set correctly. If it is not, see "Setting the clock" on page 9.
- Make sure that the loaded cassette has its safety tab intact.
- Make sure that the video TV does not enter the timer recording standby mode (the QUICK TIMER indicator on the video TV should not be lit).

### Setting the timer

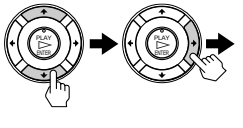
**Example:** How to record a program broadcast on program position 6 from 21:00 to 22:00 on Sunday, 28th November 1999.

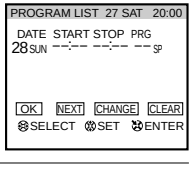



**1** Press TIMER REC.




**2** Press ↑ or ↓ to set the date , then press →.



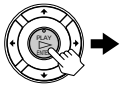


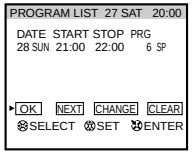
**3** Set the recording start time, recording stop time, program position/input (1 or 2) and tape speed in the same way as in step **2**.

**4** Press ENTER.

The cursor appears at OK.

For daily and weekly recording, see "Daily/ weekly recording" below.






**5** Press ← or → to move the cursor to NEXT for other programs, then press ENTER. Repeat steps **2** through **4**.

**6** Press ← or → to move the cursor to OK after setting your desired programs, then press ENTER.

The TIMER REC indicator lights up and the video TV enters timer recording standby mode.

### If you make a mistake during timer setting

Press ← to go back to the previous position and correct the setting.

### Daily/weekly recording

You can preset your video TV to record the same program every day of the week (daily recording) or the same program on the same day every week (weekly recording). Press ↓ in step **2** until the desired setting appears in the "DATE" position. With each press, the setting changes as follows:

27 (today) → MON–SUN → MON–SAT → MON–FRI → EVERY SAT → EVERY FRI → ... → EVERY SUN → 26 (next month) .....

### To stop timer recording

Press ON/OFF.

### Using the video TV before timer recording starts

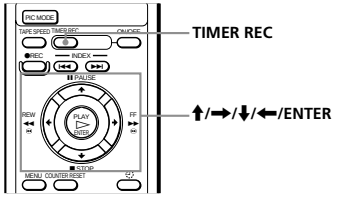
Press ON/OFF to turn off the TIMER REC indicator on the front of the video TV.
Remember to press ON/OFF again to make the TIMER REC indicator light up after setting the recording time.

continued





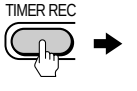
## Checking/adding/ changing/canceling the timer settings

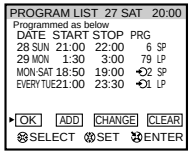



**1** Press TIMER REC.

To exit the PROGRAM LIST after checking the settings, skip steps **2** and **3**.

To add, change or clear the settings, follow steps **2** through **4**.





PROGRAM LIST 27 SAT 20:00
Programmed as below
DATE START STOP PRG
28 SUN 21:00 22:00 6 SP
29 MON 1:30 3:00 79 LP
MON-SAT 18:50 19:00 ⟲2 SP
EVERY TUE 21:00 23:30 ⟲1 LP
OK ADD CHANGE CLEAR
SELECT SET ENTER

**2** Press ← or → to move the cursor to ADD, CHANGE or CLEAR, then press ENTER.

**3** To add new settings

Follow steps **2** through **4** of "Setting the timer" on page 26.

**To change the settings**

Press ↑ or ↓ to move the cursor to the setting you want to change, then press ENTER.
Follow steps **2** through **4** of "Setting the timer" on page 26.

**To clear the settings**

Press ↑ or ↓ to move the cursor to the setting you want to clear, then press ENTER.
The setting is cleared and "--" appears.

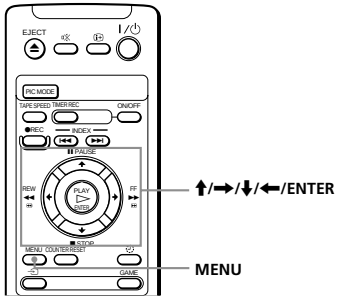
**4** Press ← or → to move the cursor to OK, then press ENTER.

If there are other timer settings on the list, the video TV enters the timer recording standby mode and the TIMER REC indicator lights up. The PROGRAM LIST disappears.

### When the timer settings overlap

The program that starts first has priority and the second program starts recording only after the first program has finished. If the programs start at the same time, the program listed first in the menu has priority.

# Adjusting the TV




## Adjusting the volume — INTELLIGENT VOL

Some programs are broadcast at different volume levels. By setting this function to ON, the volume level is stabilized and sudden changes in volume can be prevented.

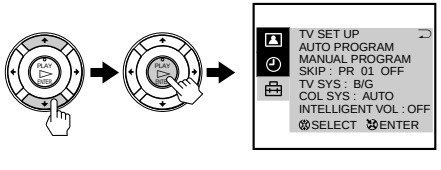
**1** Press MENU.

**2** Press ↑ or ↓ to select 🖷, then press ENTER.

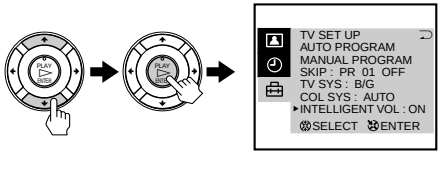
**3** Make sure TV SET UP is selected, then press ENTER.

**4** Press ↑ or ↓ to select INTELLIGENT VOL , then press ENTER.

The selected item turns red.




**5** Press ↑ or ↓ to select ON, then press ENTER.




### To return to the normal screen

Press MENU.

continued





*Adjusting the TV (continued)*

## Presetting channels manually

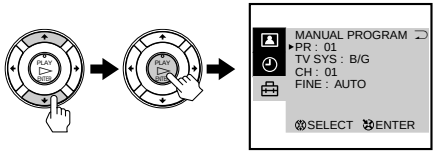
Preset the channels manually if you want to select channels that were not set automatically or if you want to allocate program numbers to channels one by one.

**1** Press MENU.

**2** Press ↑ or ↓ to select 🖷, then press ENTER.

**3** Make sure TV SET UP is selected, then press ENTER.

**4** Press ↑ or ↓ to select MANUAL PROGRAM, then press ENTER.




**5** Select the program number to which you want to assign a channel number.

(1) Make sure PR is selected, then press ENTER.

(2) Press ↑ or ↓ until the program number you want to preset appears on the menu, then press ENTER.

You can also select the program number with the PROGR +/– or number buttons.

**6** Select the desired channel.

(1) Press ↑ or ↓ to select CH, then press ENTER.

(2) Press ↑ or ↓ until the desired channel number appears on the menu, then press ENTER.

You can also select the channel number directly with the number buttons.

Press C (once for regular channels, twice for cable channels), the desired number buttons, then ENTER.

**7** If the sound of the desired channel is abnormal, select the appropriate TV system.

(1) Press ↑ or ↓ to select TV SYS, then press ENTER.

(2) Press ↑ or ↓ until the sound becomes normal, then press ENTER.

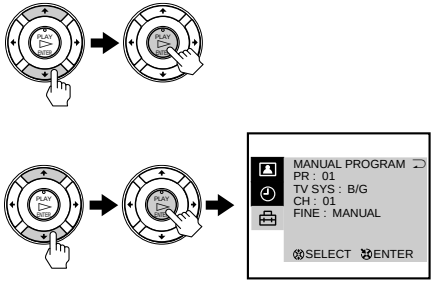
**8** If you are not satisfied with the picture and sound quality, you may be able to improve them by using the FINE tuning feature.

(1) Press ↑ or ↓ to select FINE, then press ENTER. The selected item turns red.

(2) Press ↑ or ↓ to select MANUAL, then press ENTER.

(3) Press ↑ or ↓ until the picture and sound quality are optimal, then press ENTER.

FINE tuning can be set between –15 and +15.




### To return to the normal screen

Press MENU.



continued





## Skipping program positions

You can skip unused program positions when selecting a program with the PROGR +/– buttons. However, the skipped programs may still be called up when you select them with the number buttons.

**1** Press MENU.

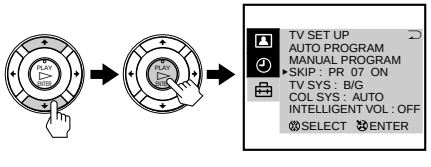
**2** Press ↑ or ↓ to select 🧰, then press ENTER.

**3** Make sure TV SET UP is selected, then press ENTER.

**4** Press ↑ or ↓ to select SKIP, then press ENTER.

**5** Press ↑ or ↓ until the program position which you want to skip appears on the menu, then press ENTER.

**6** Press ↑ or ↓ to select ON, then press ENTER.




**7** Press ENTER and repeat steps **5** and **6** to skip other program positions.

### To return to the normal screen

Press MENU.

## Adjusting the TV system

If the sound of some channels is abnormal, select the appropriate TV system for your area.

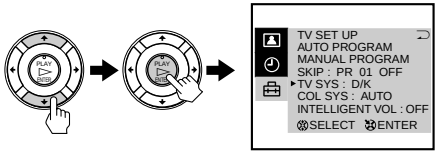
**1** Press MENU.

**2** Press ↑ or ↓ to select 🧰, then press ENTER.

**3** Make sure TV SET UP is selected, then press ENTER.

**4** Press ↑ or ↓ to select TV SYS, then press ENTER.

**5** Press ↑ or ↓ until the appropriate TV system appears on the menu, then press ENTER.




### To return to the normal screen

Press MENU.



continued





## Adjusting the color system

Normally set the color system to AUTO. However, when the picture has no color, manually select the appropriate color system for your area.

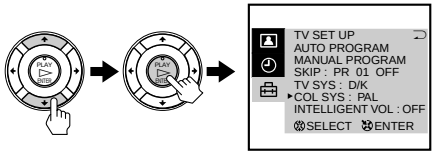
**1** Press MENU.

**2** Press ↑ or ↓ to select 🧰, then press ENTER.

**3** Make sure TV SET UP is selected, then press ENTER.

**4** Press ↑ or ↓ to select COL SYS, then press ENTER.

**5** Press ↑ or ↓ until the appropriate color system appears, then press ENTER.




### To return to the normal screen

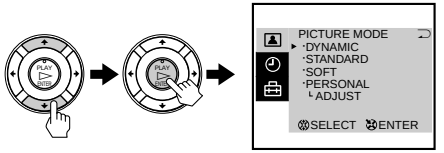
Press MENU.

## Changing the PICTURE MODE setting

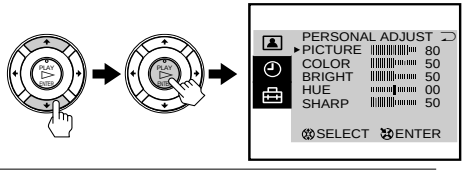
The PICTURE MODE menu allows you to adjust the picture quality.

**1** Press MENU.

**2** Press ↑ or ↓ to select , then press ENTER.




**3** Press ↑ or ↓ to select ADJUST, then press ENTER.




**4** Press ↑ or ↓ to select the desired item, then press ENTER.

The adjustment bar for the selected item appears at the bottom of the screen.

**5** Adjust the value according to the following table, then press ENTER.

| For | Press ↓ or ← to | Press ↑ or → to |
|---|---|---|
| PICTURE | decrease picture contrast | increase picture contrast |
| COLOR | decrease color intensity | increase color intensity |
| BRIGHT | darken the picture | brighten the picture |
| HUE* | increase red picture tones | increase green picture tones |
| SHARP | soften the picture | sharpen the picture |

*You can adjust HUE for the NTSC color system only.

### To return to the normal screen

Press MENU.

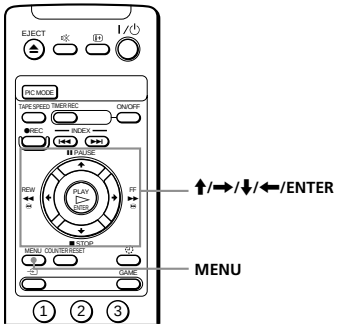
continued





## Adjusting the alignment of the picture

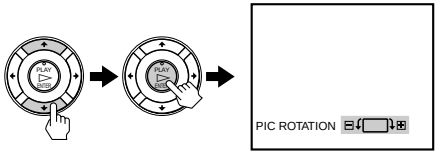
The picture may be out of alignment due to influence from the earth's magnetic field in relation to the position of the TV. You can adjust the angle of the picture if it is not aligned to the TV screen.




**1** Press MENU.

**2** Press ↑ or ↓ to select , then press ENTER.

**3** Press ↑ or ↓ to select PIC ROTATION, then press ENTER.




**4** Press ↑, ↓, ← or → to align the picture's position, then press ENTER.

# Tape options

## Adjusting the tracking

### Adjusting the tracking automatically

The tracking condition is automatically adjusted when this function is set to AUTO.

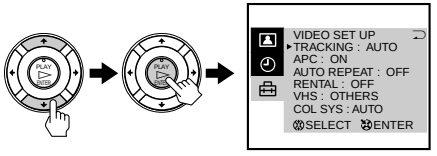
### Adjusting the tracking manually

If streaks or snow noise appear during normal playback, adjust the tracking.

**1** Press MENU in playback mode.

**2** Press ↑ or ↓ to select 🧰, then press ENTER.

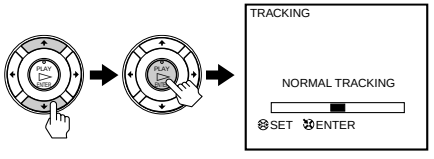
**3** Press ↑ or ↓ to select VIDEO SET UP, then press ENTER.




**4** Make sure TRACKING is selected, then press ENTER.

**5** Press ↑ or ↓ to select MANUAL, then press ENTER.

The tracking meter appears on the screen.




**6** Press ↑, ↓, ← or → to reduce picture noise, then press ENTER.

### To return to the normal screen

Press MENU.

continued





## Adjusting with Adaptive Picture Control (APC)

This function allows you to improve playback and recording quality automatically according to the condition of the video tape.
This function is set to ON at the factory. To maintain better picture quality, it is advisable to leave the function on. The APC function works on all types of tapes, even on rental tapes.

### To change the setting

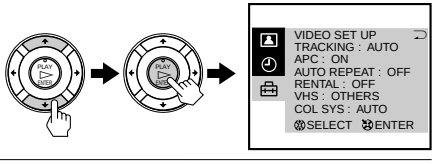
**1** Press MENU.

**2** Press ↑ or ↓ to select 🧰, then press ENTER.

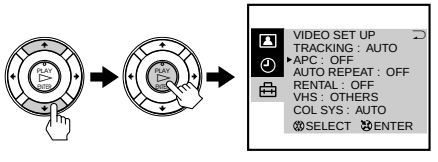
**3** Press ↑ or ↓ to select VIDEO SET UP, then press ENTER.

**4** Press ↑ or ↓ to select APC, then press ENTER.

The selected item turns red.




**5** Press ↑ or ↓ to select OFF, then press ENTER.




### To return to the normal screen

Press MENU.

## Playing a tape repeatedly

You can play the recorded portion of a tape repeatedly.

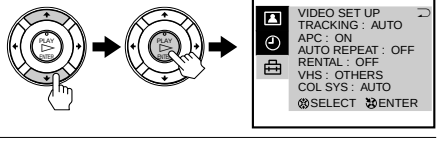
**1** Press MENU.

**2** Press ↑ or ↓ to select 🧰, then press ENTER.

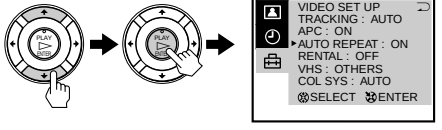
**3** Press ↑ or ↓ to select VIDEO SET UP, then press ENTER.

**4** Press ↑ or ↓ to select AUTO REPEAT, then press ENTER.

The selected item turns red.




**5** Press ↑ or ↓ to select ON, then press ENTER.




**6** Press MENU to return to the normal screen.

**7** Press PLAY ►.

Playback starts. When the tape reaches its end, the video TV rewinds the tape to the beginning, then plays it again.

continued



*Tape options (continued)*

## Adjusting the picture for rental tapes

If you are not satisfied with the picture quality while playing a tape, even when APC is on, set RENTAL to ON. It is recommended to use this function when watching rental tapes.

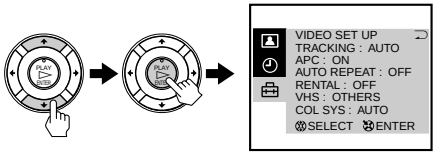
**1** Press MENU.

**2** Press ↑ or ↓ to select 🧰, then press ENTER.

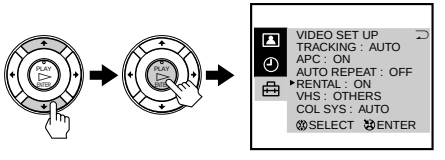
**3** Press ↑ or ↓ to select VIDEO SET UP, then press ENTER.

**4** Press ↑ or ↓ to select RENTAL, then press ENTER.

The selected item turns red.




**5** Press ↑ or ↓ to select ON, then press ENTER.




### To return to the normal screen

Press MENU.

## When connecting to a Sony VCR

If you use this video TV with another Sony VCR, the remote control may accidentally operate both the video TV and VCR at the same time. To prevent this from happening, set VHS to SONY so that the remote control operates only this video TV.

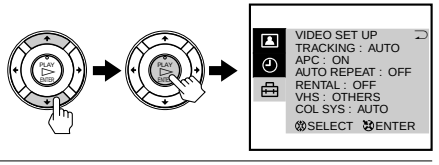
**1** Press MENU.

**2** Press ↑ or ↓ to select 🧰, then press ENTER.

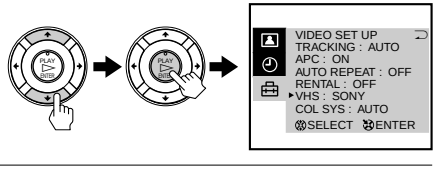
**3** Press ↑ or ↓ to select VIDEO SET UP, then press ENTER.

**4** Press ↑ or ↓ to select VHS, then press ENTER.

The selected item turns red.




**5** Press ↑ or ↓ to select SONY, then press ENTER.




### To return to the normal screen

Press MENU.



continued





## Setting the color system

Normally set COL SYS in the menu to AUTO. If streaks appear during playback, set COL SYS to correspond to the system that the tape was recorded in.

**1** Press MENU.

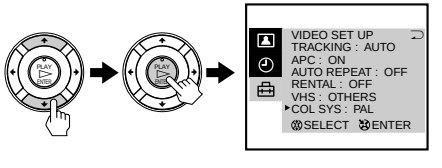
**2** Press ↑ or ↓ to select 🧰, then press ENTER.

**3** Press ↑ or ↓ to select VIDEO SET UP, then press ENTER.

**4** Press ↑ or ↓ to select COL SYS, then press ENTER.

**5** Press ↑ or ↓ until the corresponding color system appears, then press ENTER.

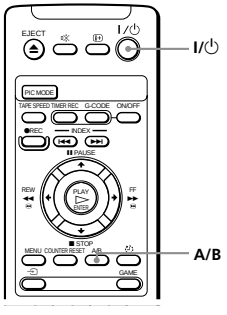
Select the same color system that the tape was recorded in.




### To return to the normal screen

Press MENU.

# Selecting a bilingual program (KV-VF14M77)




You can listen to the sub-channel of NICAM bilingual I system programs.

Press A/B repeatedly until you receive the sound mode you want.

The on-screen display changes to show the selected sound mode and the ⏻ indicator on the video TV lights up in red.

| Broadcasting | On-screen display (Selected sound) |
|---|---|
| NICAM bilingual I | MAIN (Main sound) → SUB (Sub sound) → MONO (Regular sound) |

**Notes**

- Bilingual broadcasts can be received only in the NICAM bilingual I television system.
- Only the selected sound can be recorded.

### If the sound is distorted or noisy when receiving a monaural program through the ⅂⅂ (antenna) terminal

Press A/B repeatedly until "MONO" appears on the screen. To cancel the monaural sound setting, press A/B again until "AUTO" appears on the screen.

MONO → AUTO

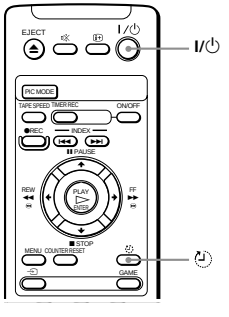
**Note**

- The "MONO" or "AUTO" setting is memorized for each program position.





# Switching off automatically —SLEEP




You can automatically switch the video TV into standby mode after a selected time period.

Press ⏲.

With each press, the time period (in minutes) changes as illustrated.

One minute before the TV switches into standby mode, the message "SLEEP TIMER: 1M" is displayed on the screen.

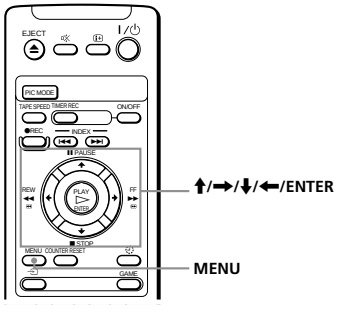
OFF → 30M → 60M → 90M

### To cancel the timer

Press ⏲ to select OFF or press I/⏻ to turn on the power.

# Switching on automatically —ON TIMER

You can preset your video TV to automatically switch on at a desired time. You can select the TV program, video playback or input source to be switched on.




**1** Press MENU.

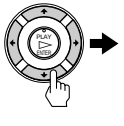
**2** Press ↑ or ↓ to select 🕘, then press ENTER.

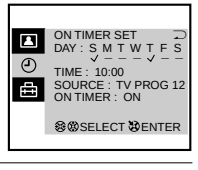
**3** Make sure ON TIMER SET is selected, then press ENTER.

**4** Make sure that the cursor appears at DAY, then press ENTER.

The selected item turns red.

**5** Press ↑, ↓, ← or → to set the timer on (✓) or off (–) for each day of the week.






**6** Press ↑ or ↓ to select TIME, then press ENTER.

**7** Press ↑ or ↓ to set the on-time hour and minute, then press ENTER.

**8** Press ↑ or ↓ to select SOURCE, then press ENTER.

**9** Press ↑ or ↓ to set the source to be switched on, then press ENTER.

The SOURCE changes as follows.

TV PROG → VCR ► (video playback)

If you select TV PROG, press ↑ or ↓ to change the channel numbers. Then press ENTER again.

**10** Press ↑ or ↓ to select ON TIMER, then press ENTER.

**11** Press ↑ or ↓ to set ON TIMER to ON, then press ENTER.

**12** Press MENU to return to the normal screen.

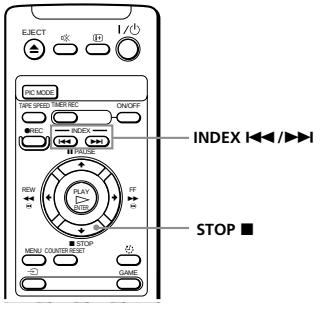
The 🕘 indicator on the video TV lights up.

### To cancel the on-timer function

In step **11**, press ↑ or ↓ to set ON TIMER to OFF, then press ENTER.
The 🕘 indicator on the video TV turns off.

# Searching using the index function

The video TV marks the tape with an index signal at the point where each recording begins. Use these signals as references to find a specific recording. This video TV can search up to 99 index signals ahead of or behind the current position.

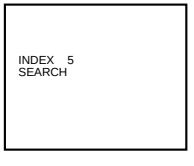



**1** Insert an indexed tape.

**2** Press INDEX I◄◄/►►I repeatedly to specify how many index signals ahead or behind you want to search.

To search ahead, press INDEX ►►I.

To search backwards, press INDEX I◄◄.




The video TV starts searching and the index number on the TV screen counts down to zero. Playback starts automatically from that point.

### To stop searching

Press STOP ■.

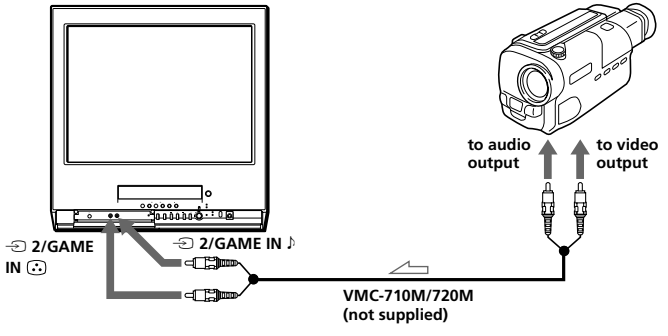




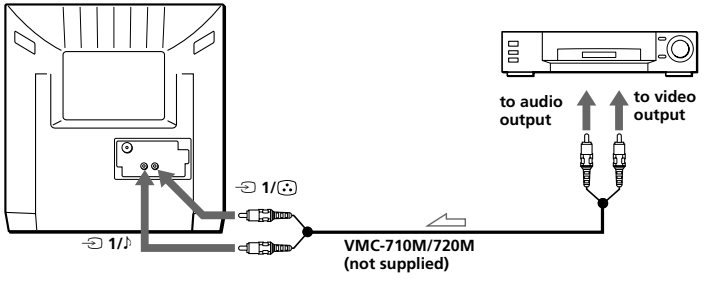
# Connecting optional equipment

## Watching and recording the picture input from optional equipment

### To connect a video camera




### To connect a VCR

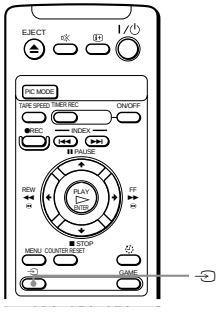



: Signal flow

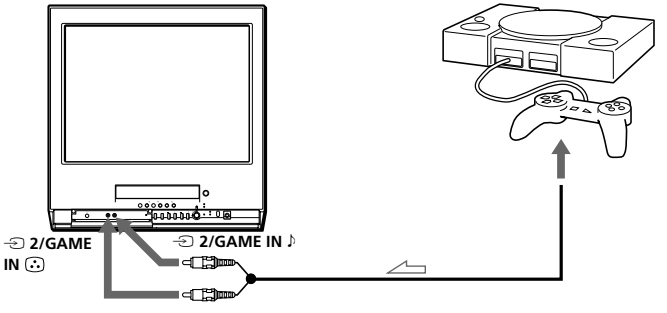
continued

### To watch the video input signal

Press ⇨ so that ⇨1 or ⇨2 appears on the screen.

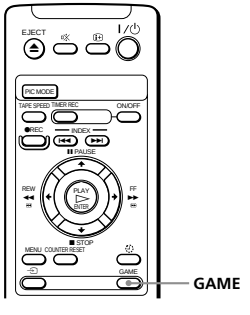


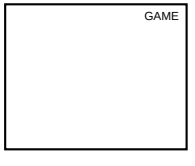
### To connect a video game




### To display the video game screen

Press GAME when the video TV is in standby mode.



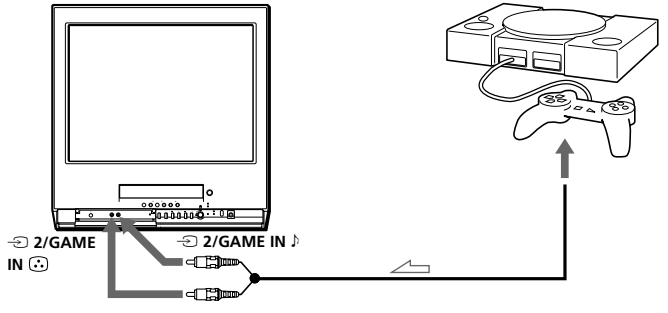

### To switch to a TV program

Press the number button on the remote control, PROGR +/– or ⇨ on the video TV or remote control.

### To switch to the VCR

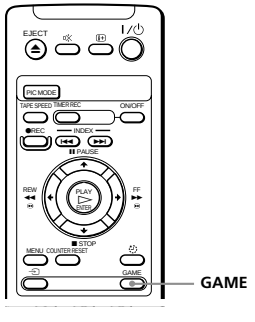
Press the PLAY ► button on the video TV or remote control when a cassette is in the video TV.

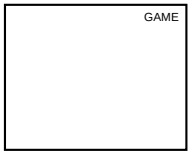
### To connect a video game




### To display the video game screen

Press GAME when the video TV is in standby mode.




### To switch to a TV program

Press the number button on the remote control, PROGR +/– or ⏎ on the video TV or remote control.

### To switch to the VCR

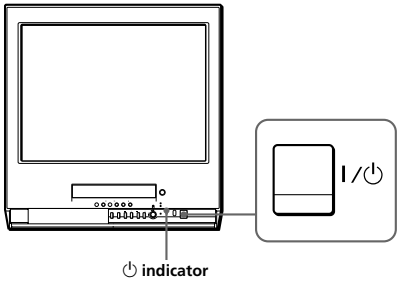
Press the PLAY ► button on the video TV or remote control when a cassette is in the video TV.





# Self-diagnosis function

Your video TV is equipped with a self-diagnosis function. If there is a problem with your video TV, the ⏻ indicator flashes in red. The number of times the indicator flashes indicates the possible causes.




**1** Check that the ⏻ indicator flashes red once or more in intervals of 3 seconds.

**2** Count the number of times the indicator flashes.

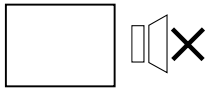
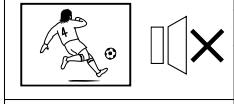
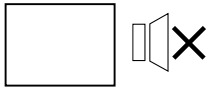
**3** Press I/⏻ to turn off your video TV.

**4** Inform your nearest Sony service facility about the number of times the indicator flashes.

Be sure to note the model name and serial number located on the rear of your video TV.

# Troubleshooting

If you have any problems while viewing your video TV, please check the following troubleshooting guide. If the problem persists, contact your Sony dealer.

| Symptom | Possible cause | Solutions |
|---|---|---|
| **TV section** | | |
| No picture/No sound  | The power cord or antenna is not connected. | Check the AC power cord and the antenna connections. |
| | The video TV is not turned on. | Press I/⏻ on the video TV. If the standby indicator (⏻) is lit in red, press I/⏻ or a program number button on the remote control. |
| Good picture/No sound  | The volume level is too low. | Press + to increase the volume level. |
| | The sound is muted. | Press to cancel the muting. |
| | Headphones are connected to (headphones) jack. | Disconnect the headphones. |
| No color or poor color | The color level setting is too low. | Adjust PICTURE, COLOR and BRIGHT in the PERSONAL ADJUST menu. (page 35) |
| | The picture setting is inappropriate. | Press PIC MODE to switch the picture setting. (page 15) |
| | The color system setting is inappropriate. | Display the TV SET UP menu and check the color system (COL SYS) setting. (page 34) |
| | The antenna direction, position and angle need adjustment. | Adjust the antenna direction, position and angle. Contact a Sony dealer for advice. |
| Double images or "ghosts" | Broadcast signals are reflected by nearby mountains or buildings. | Use a highly directional antenna. |
| | The antenna direction, position and angle need adjustment. | Adjust the antenna direction, position and angle. Contact a Sony dealer for advice. |
| No picture/No sound from video input sources  | The connecting cord between the video TV and the input sources is disconnected. | Check the connection between the video TV and the input sources. |
| | Input is not selected correctly. | Press so that "1" or "2" appears. (page 48) |

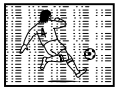
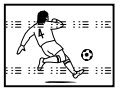
continued

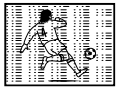








| Symptom | Possible cause | Solutions |
|---|---|---|
| Good picture/Abnormal sound | The TV system setting is inappropriate. | • If the sound of all the channels is abnormal, display the TV SET UP menu and select the appropriate TV system (TV SYS), then preset the channels again. (pages 11 and 12)<br>• If the sound of some channels is abnormal, display the MANUAL PROGRAM menu in the TV SET UP menu and select the appropriate TV system (TV SYS). (page 30) |
| Snowy picture/Abnormal sound  | The connection is loose or the cable is damaged. | Check the antenna cable and connection on the video TV and at the wall. |
| | The channel presetting is inappropriate or incomplete. | Display the TV SET UP menu and select MANUAL PROGRAM to manually preset the channel again. |
| | The antenna type is inappropriate. | Check the antenna type (VHF/UHF). Contact a Sony dealer for advice. |
| | The antenna direction, position and angle need adjustment. | Adjust the antenna direction, position and angle. Contact a Sony dealer for advice. |
| Dotted lines or stripes  | There is local interference from cars, neon signs, hair dryers, power generators, etc. | • Do not use a hair dryer or other equipment near the video TV.<br>• Adjust the antenna direction, position and angle for minimum interference. Contact a Sony dealer for advice. |
| Abnormal color patches | There is magnetic disturbance from external speakers or other equipment. | Locate external speakers or other equipment away from the video TV. Press I/⏻ on the video TV to turn off the video TV for about five minutes, then turn it on again. |
| Picture slant | Display the menu and adjust "PIC ROTATION" so that the picture is aligned to the TV screen. (page 36) | The terrestrial magnetism affects your TV set. |
| **Clock and timer section** | | |
| The clock has stopped and "--:--" is displayed. | The power has been interrupted or the AC power cord is disconnected. | Re-set the clock and timer settings. (page 9) |

| Symptom | Possible cause | Solutions |
|---|---|---|
| **Playback section** | | |
| Power is on, but the tape does not run. | The safety device has been activated. | Switch off, disconnect the AC power cord, and leave the set for about one minute. |
| Poor playback picture  | The color system setting is inappropriate. | Display VIDEO SET UP and set the color system (COL SYS) to the setting corresponding to the color system that the tape is recorded in. (page 42) |
| | The tracking condition is inappropriate. | Adjust the tracking manually. (page 37) |
| | The video heads are dirty. | Clean the video heads using the Sony T-25CLD, T-25CLDR, or T-25CLW video head cleaning cassette (not supplied). If these cleaning cassettes are not available in your area, have the heads cleaned at your nearest Sony service facility (a standard service fee will be charged). Do not use any commercially available liquid type cleaning cassettes other than Sony's, as it may damage the video heads. |
| | The video heads may be worn out. | The video heads may have to be replaced. Contact a Sony dealer for advice. |
| | The tape is worn out. | Use a new tape. |
| The sound drops out. | The tape is defective. | Use a new tape. |

### Symptoms caused by contaminated video heads

**• Normal picture • Rough picture • Unclear picture • No picture (or black & white screen appears)**

**initial contamination → terminal**

continued



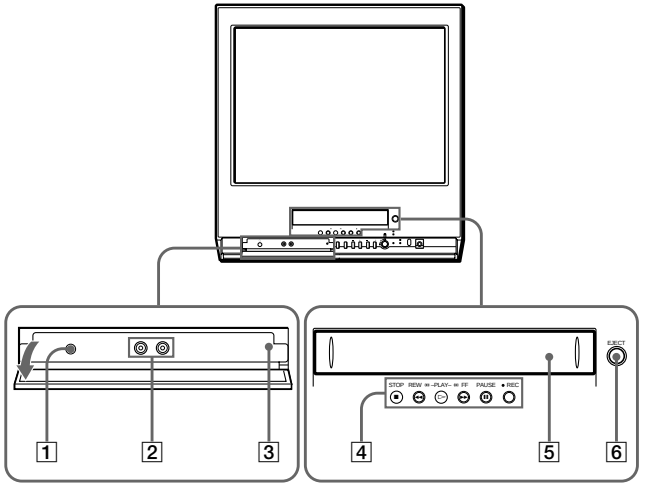
## *Troubleshooting (continued)*

| Symptom | Possible cause | Solutions |
|---|---|---|
| **Recording section** | | |
| The cassette is ejected when you press REC ●. | The safety tab of the cassette has been removed. | Cover the safety tab hole with adhesive tape, or use another cassette with its safety tab intact. |
| Cannot record. | No cassette has been inserted. | Insert a cassette with its safety tab intact. |
| | The tape is at its end. | Rewind the tape. |
| **Timer recording section** | | |
| Cannot program a recording using the timer. | The clock has not been set. | Set the current time and date. (page 9) |
| The cassette is ejected when you press ON/OFF. | The safety tab of the cassette has been removed. | Cover the tab hole with adhesive tape, or use another cassette with its safety tab in place. |
| The TIMER REC indicator does not light up even though you press ON/OFF. | No cassette has been inserted. | Insert a cassette with its safety tab intact. |
| | The tape is at its end. | Rewind the tape. |
| | No setting is made for timer recording. | Set the program for timer recording. (pages 26 through 27) |
| Timer recording was not made. | • You did not press ON/OFF.<br>• There has been a power interruption. | — |
| **Others** | | |
| A cassette cannot be inserted. | Another cassette is already inserted. | Press EJECT ⏏ to eject the cassette. |
| The remote control does not work. | The batteries are low. | Replace the batteries. (page 4) |
| | The batteries are installed incorrectly. | Install the batteries with correct polarities. (page 4) |
| TV cabinet creaks. | Changes in room temperature sometimes make the TV cabinet expand or contract, causing a noise. This does not indicate a malfunction. | — |
| A small "boom" sound is heard when the video TV is turned on. | The video TV's demagnetizing function is working. This does not indicate a malfunction. | — |

# Identifying parts and controls

Refer to the pages indicated in parentheses ( ) for details.

## Front panel




1 ∩ (headphones) jack

2 2/GAME IN jacks ( (video)/♪ (audio)) (47, 48)

3 TUNER PRESET ON/OFF button (12, 13)

4 Tape transport buttons
STOP ■ button (17, 20)
REW ◀◀/ button (17)
PLAY ▶ button (17)
FF ▶▶/ button (17)
PAUSE ❚❚ button (17, 20)
REC ● button (20)

5 Cassette compartment

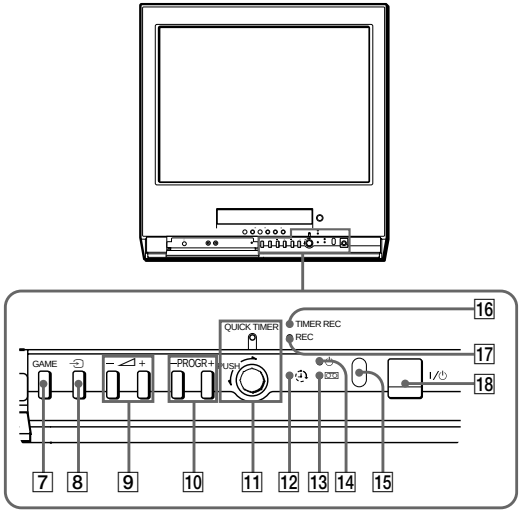
6 EJECT ⏏ button (17)



continued








7 GAME button (13, 49)

8 (input select) button (48)

9 (volume) +/– buttons (15)

10 PROGR +/– buttons (14)

11 QUICK TIMER (22, 23)
Indicator
Rotary button

12 (ON TIMER) indicator (44)

13 (VCR) indicator (20)

14 ⏻ (standby) indicator (14)

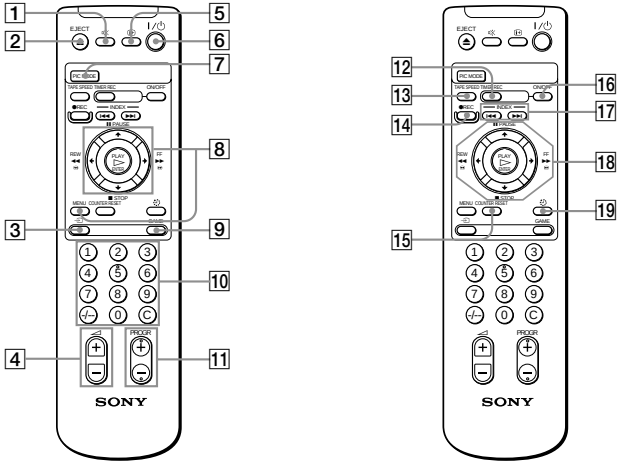
15 Remote control sensor

16 TIMER REC (recording) indicator (27)

17 REC (recording) indicator (20)

18 I/⏻ (power/standby) switch (14)

### *Remote control*

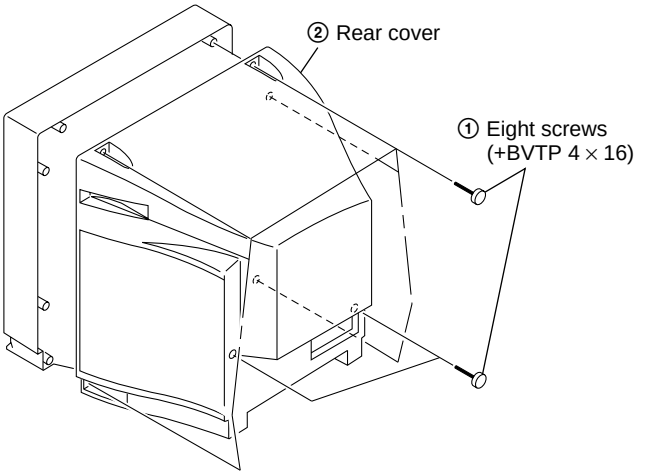



1 (muting) button (15)
2 EJECT ⏏ button (17)
3 (input select) button (48)
4 (volume) +/– buttons (15)
5 (display) button (16, 18)
6 I/⏻ (power/standby) button (14)
7 PIC MODE (picture mode) button (15)
8 Menu operation buttons (26)
  MENU button
  ↑/←/↓/→ buttons
  ENTER button
9 GAME button (49)
10 Number buttons (19)
11 PROGR +/– buttons (19)
12 TIMER REC (recording) button (26)
13 TAPE SPEED button (19)
14 REC ● (recording) button (20)
15 COUNTER RESET button (18)
16 ON/OFF button (for timer recording) (27)
17 INDEX I◀◀/▶▶I button (46)
18 Tape transport buttons
  PAUSE ❚❚ button (17, 20)
  REW ◀◀/ button (17)
  STOP ■ button (17, 20)
  FF ▶▶/ button (17)
  PLAY ▶ button (17)
19 (SLEEP TIMER) button (43)

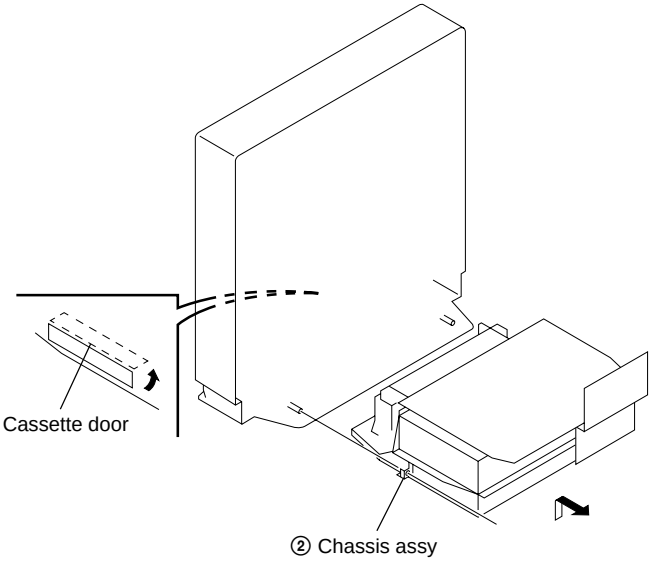
MEMO

# SECTION 2
# DISASSEMBLY

## 2-1. REAR COVER REMOVAL



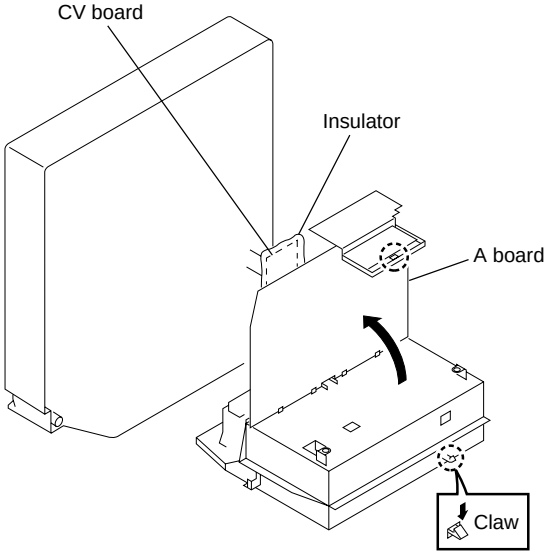

## 2-2. CHASSIS ASSY REMOVAL




**Caution:** ① Before the chassis assy removal, please make sure the power cord is pull out to prevent electric shock.

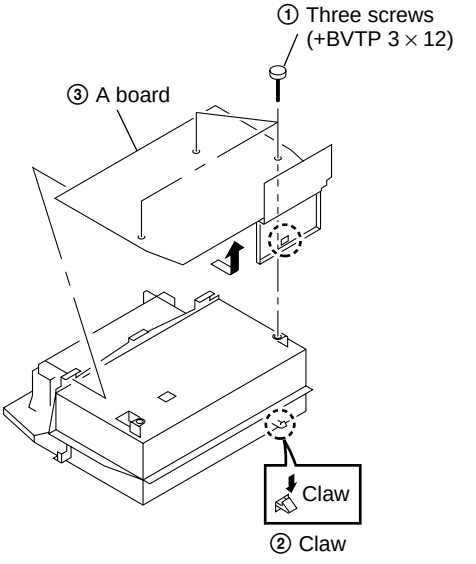
**Note:** ② Notice for Installing chassis assembly Install chassis assembly when keep the cassette door open state.

## 2-3. SERVICE POSITION (A BOARD)



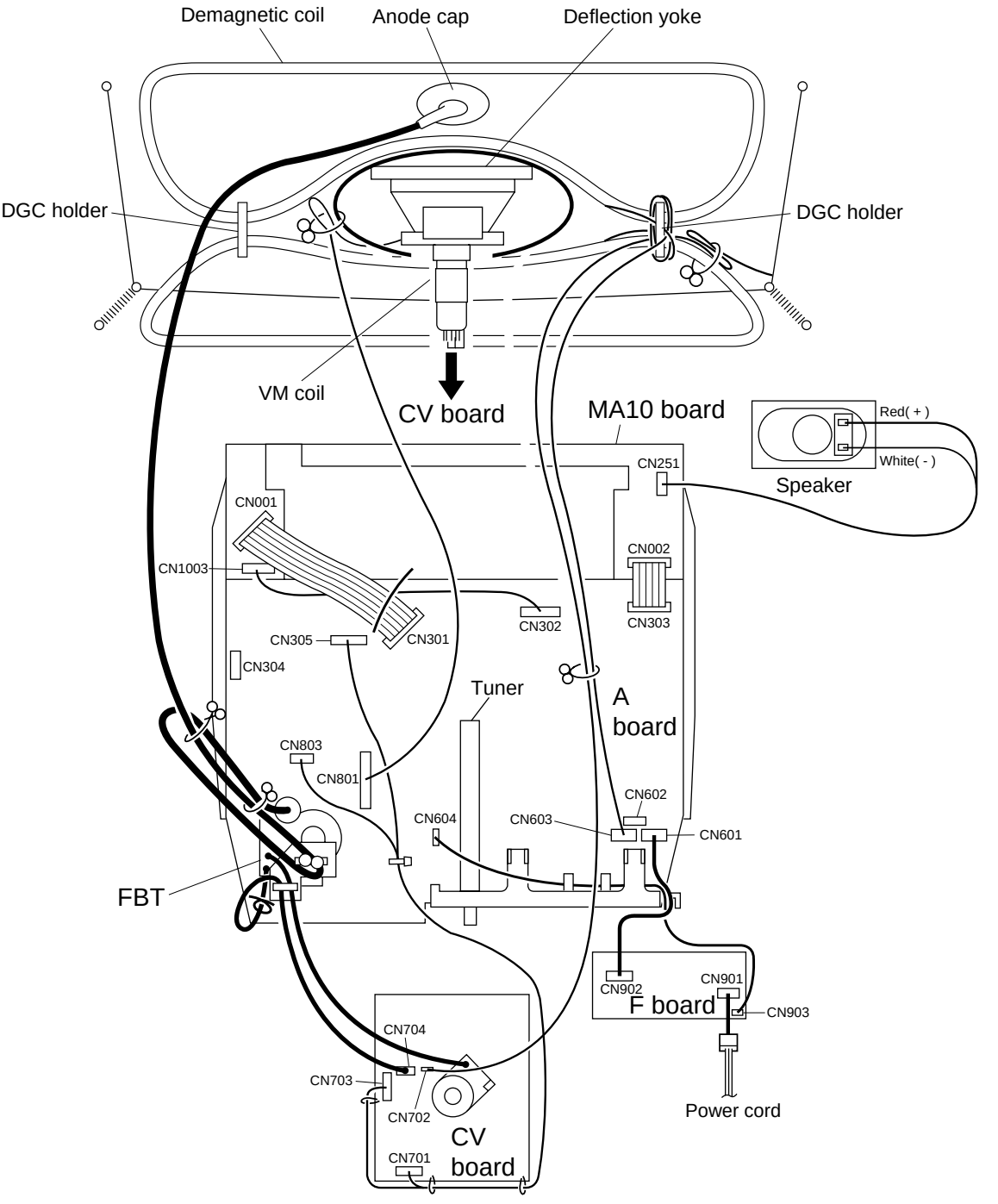

**Note:** Open the A board after move the claw

## 2-4. A BOARD REMOVAL

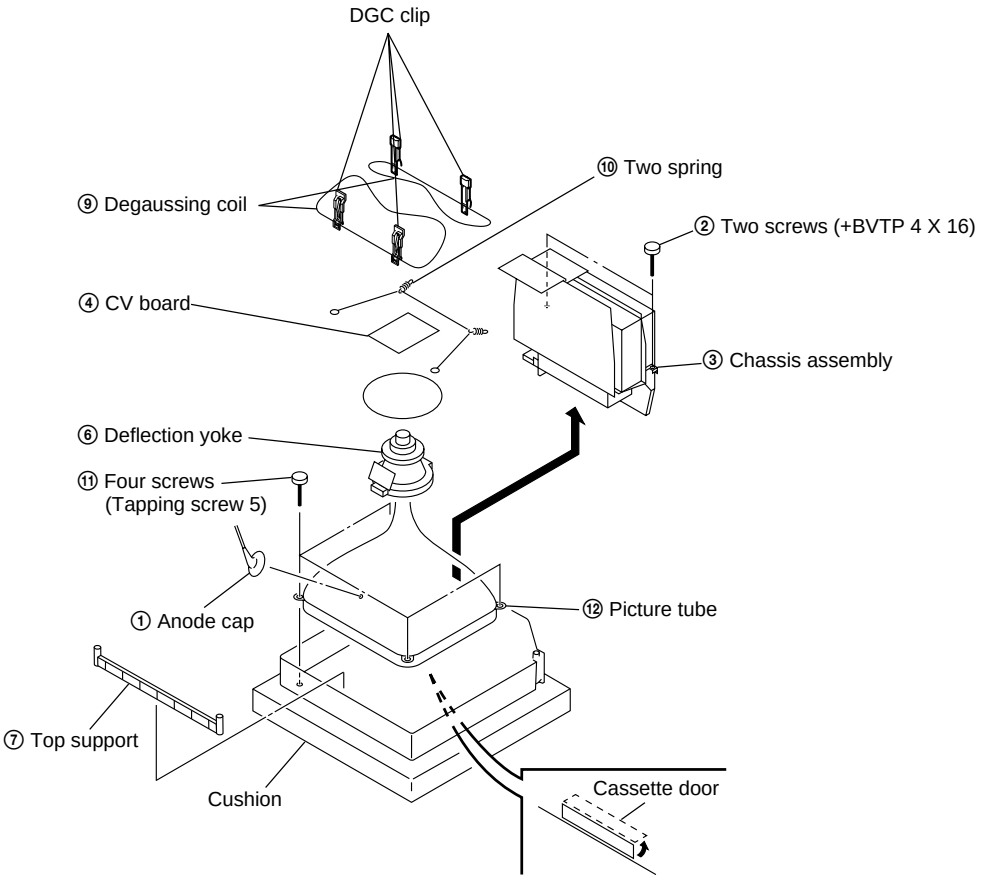



**Note:** ① Push the claw to the direction of the arrow.
② Pull the A board in the direction of the arrow and remove.

## 2-5. HARNESS LOCATION



## 2-6. PICTURE TUBE REMOVAL



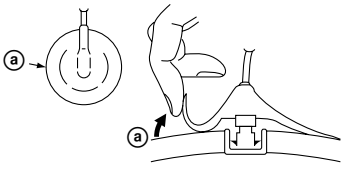

**Note:** Notice for Installing chassis assembly.
Install chassis assembly when keep
the cassette door open state.

- **Removal of anode-cap**

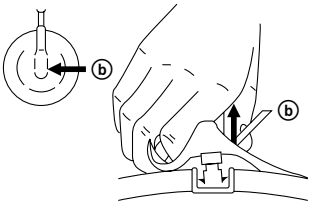
NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

- **removing procedures**

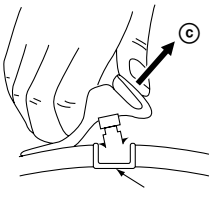
① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.




② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.

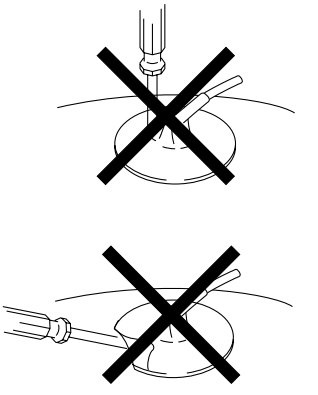



③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ.




- **how to handle an anode-cap**

① Don't hurt the surface of anode-caps with shaped objects!
② Don't press the rubber too hard so as not to hurt inside of anode-caps!
A metal fitting called the shatter-hook terminal is built into the rubber.
③ Don't turn the foot of rubber over too hard!
The shatter-hook terminal will stick out of damage the rubber.



# SECTION 3
# SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with the rated power supply voltage, unless otherwise noted.

The PICTURE and Brightness controls should be set as follows unless otherwise noted:

PICTURE control ..... standard
BRIGHTNESS control ..... standard

Perform the adjustments in the following order:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2)
5. White Balance
6. Picture Distortion

**Note:** Test Equipment Required.
1. Color bar/Pattern Generator
2. Degausser
3. Oscilloscope

**Preparation:**

- In order to reduce the influence of external magnetic forces on the picture tube, face the TV set in an easterly or westerly direction.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

## 3-1. BEAM LANDING

1. Receive PAL MONOSCO signal, make [picture] to maximum.
2. Set service mode to VP38 (RON) = "00", VP39 (GON) = "01", VP40 (BON) = "00" and make all green pattern.
3. Shift the DY Assy to full of front side and rotate purity magnet and make green to center. (Fig.3-1 to 3-3)
4. Rotate DY Assy to right and the left and screen align to horizontal.
5. Shift slowly the DY Assy to back side and set raster to get full green. (Fig.3-3)
6. Fix roughly the DY Assy by the stopper.
7. When the landing at the corners is not correct, adjust by using disk magnets. (Fig.3-4)
8. Set service mode to VP38 (RON) = "01", VP39 (GON) = "01", VP40 (BON) = "01".

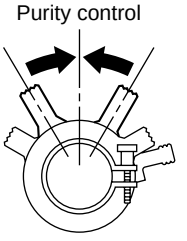



Fig.3-1

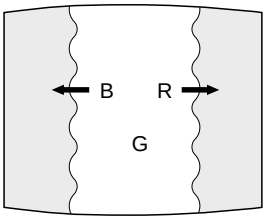



Fig.3-2

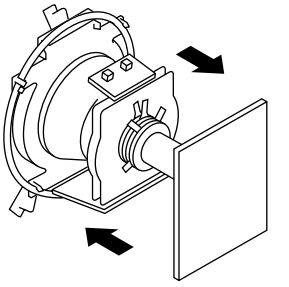


Fig.3-3

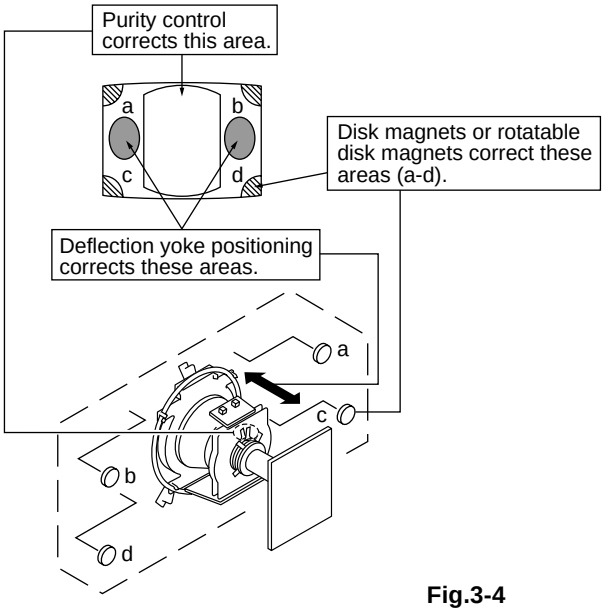
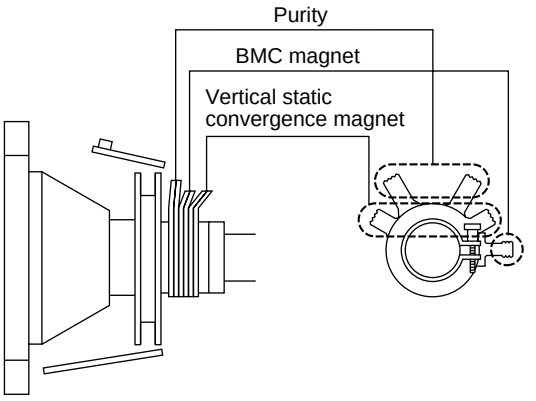



Fig.3-4

## 3-2. CONVERGENCE




### (1) Horizontal and Vertical Static Convergence

1. Receive DOT HATCH signal adjust [BRT], [PIX] to looks easily.
2. Set V. STAT Mg, BMC Mg to standard condition.
3. Correct V. STAT Mg.
   (Correct vertical lag of R, B-DOT around the center of CRT.)
   (Fig.3-5)
4. Adjust BMC Mg.
   (Make evenly horizontal lag of R, B-DOT toward G-DOT around the center of CRT.)
5. Adjust H. STAT VR. (RV701)
   (Adjust horizontal lag of R, B-DOT around the center of CRT.)
   (Fig.3-5)
6. Have to tracking adjust V. STAT Mg, BMC Mg because DOT moves influence each other.
   (Correct vertical lag of R.G.B.-DOT.)

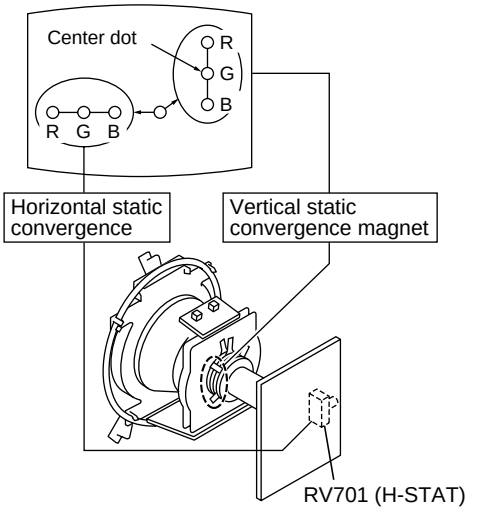
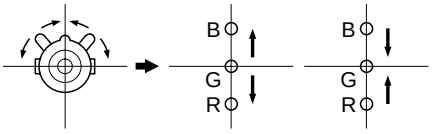


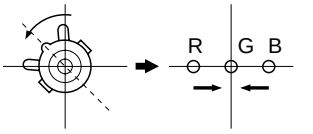

**Fig.3-5**

- **Movement of red, green and blue dots by V. STAT tilting and opening or closing.**

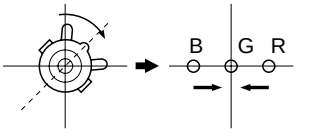
① Movement of opening or closing the V. STAT convergence magnet.



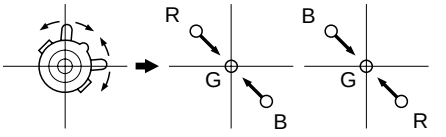

② Movement of tilting the V. STAT convergence magnet counterclockwise.




③ Movement of tilting the V. STAT convergence magnet clockwise.

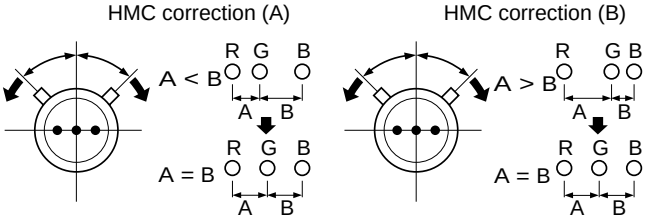



④ Movement of tilting and opening or closing the V. STAT convergence magnet.

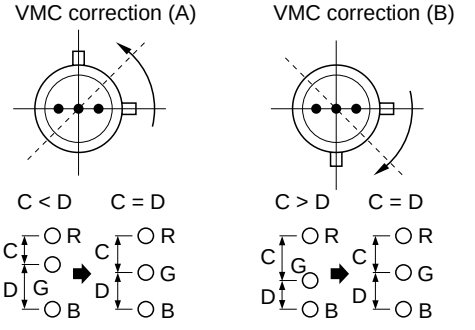



- **If the blue dot did not harmonize with red and green, then use the BMC magnet to adjust.**

1)HMC (Horizontal mis-convergence) correction




2)VMC (Vertical mis-convergence) correction.



- **Adjust TLH. (TLH CORRECTION PIECE : 4-057-714-01)**
  Correct horizontal mis-convergence of X axis' right and left red and blue. When red is outside and view from DY neck side, insert TLH correction piece to rightside (TLH+) and when blue is outside and also view from DY neck side, insert TLH correction piece to left (TLH-).

- **Adjust YCH. (YCH)**
  Adjust the horizontal convergence of red and blue of Y axis' up and down part.
  (Adjust with tracking)

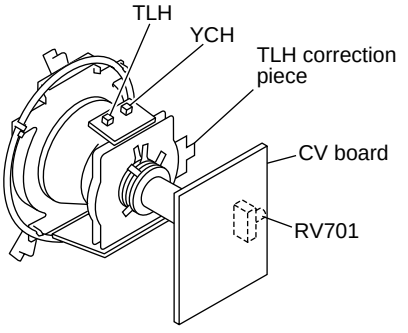



**Fig.3-6**

**(2) Convergence adjustment of screen surroundings.**
(Dynamic convergence)

1. Adjust by the deflection yoke (swivel) to screen both sides cross mis-convergence become finest whole screen. (Fig.3-7)
2. Fix the deflection yoke to insert the wedge to the picture tube funnel and the deflection yoke. (Fig.3-8)

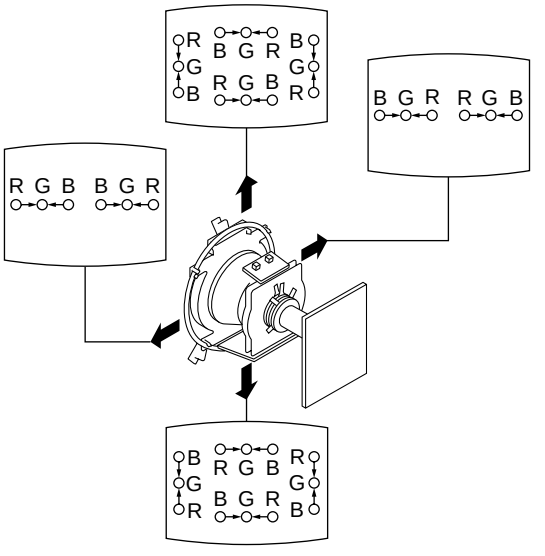



**Fig.3-7**

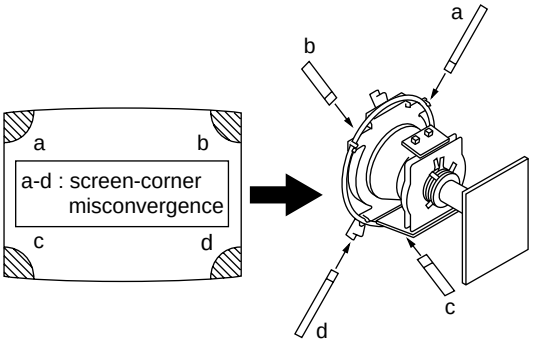



**Fig.3-8**

## 3-3. FOCUS ADJUSTMENT

1. Receive PAL MONOSCO signal, with standard condition.
2. Focus adjustment should be balanced whole picture area (not detail), and adjust focus by [FOCUS] VR of FBT. (Fig.3-9)
3. Receive ALL WHITE signal.
4. Magenta ring should be within limit sample. (Fig.3-9)
   <If out of limit>
   Tracking adjust magentaring and the focus by [FOCUS] VR of FBT.

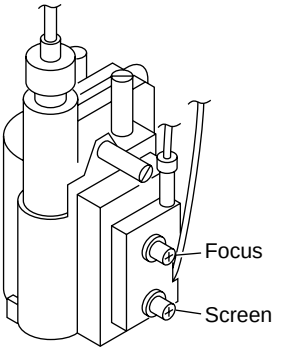



**Fig.3-9**

## 3-4. SCREEN (G2) ADJUSTMENT

1. Receive white signal and make standard condition.
2. Set service data to VP38 (RON), VP39 (GON), VP40 (BON) = "00" and take care that the screen become pitch-dark.
3. Add 175 ± 1.0VDC external voltage to cathodes of red, green, blue.
4. Adjust to obtain just before retrace line goes out (The point where the retrace line is going to appears). (Fig.3-9)
5. Set service data to VP38 (RON), VP39 (GON), VP40 (BON) = "01".

## 3-5. WHITE BALANCE ADJUSTMENT

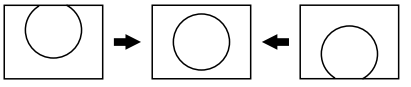
1. Receive color-bar signal and set menu picture quality to minimum picture and standard brightness.
2. Set to service mode and adjust CUT-OFF (VP25-green, VP26-blue) and DRIVE (22-green, VP23-blue) of center.
3. Switch to all white signal.
4. Repeat CUT-OFF adjustment to become finest white balance between minimum picture and maximum picture.
5. Receive PAL MONOSCO signal.
6. Adjust sub-bright (VP29-SBRT) to become gleaming.
7. Subtract 1 step from below adjusted data.

**Fig.3-10**

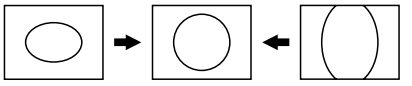
## 3-6. PICTURE DISTORTION ADJUSTMENT

- When performing these adjustment, do receive monoscope signal.

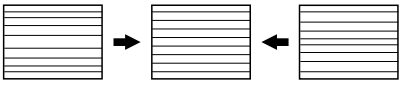
VP1 (VPOS)



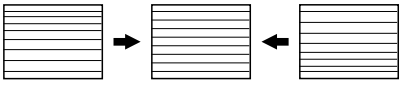
VP2 (VSIZ)



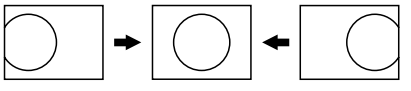
VP3 (SCOR)



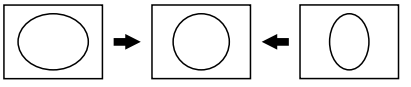
VP4 (VLIN)



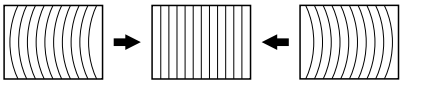
VP5 (HPOS)



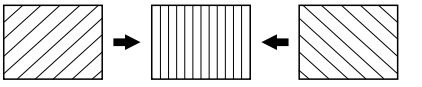
VP6 (HSIZ)



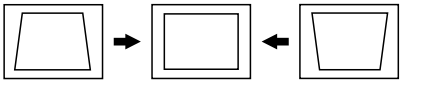
VP7 (AFBW)



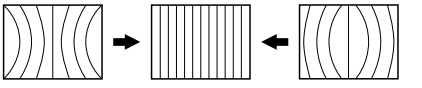
VP8 (AFAG)



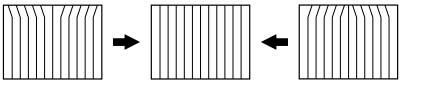
VP9 (TRAP)



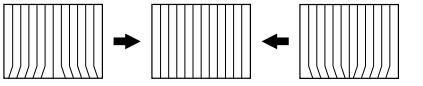
VP10 (PAMP)



VP11 (UCPN)



VP12 (LCPN)



# SECTION 4
# SAFETY RELATED ADJUSTMENT

## CONFIRMATION OF HOLD-DOWN

When the parts with a ⋈, ◪ mark on the circuit diagram shown below are replaced, confirm the matters described in items 1. and 2. shown below.

⋈: PM601, R614, C614, IC607, R638

### 1. CONFIRMATION OF +B LINE (A BOARD)

1) Input $110^{+2}_{-0}$V AC.
2) Receive DOT HATCH signal and adjust PIX, BRT to minimum.
3) Connect the digital multimeter to ⊕ line of C632. (Fig.4-2)
4) Confirm the voltage value of +B line corresponds like below.

Less than 137.5V DC

### 2. CONFIRMATION OF HOLD-DOWN (A BOARD)

1) Receive monoscope signal and adjust PIX, BRT, VOL to standard.
2) Input the undermentioned voltage to between C632 + side and GND, then check the protector function to works. (Fig.4-1)

Less than 142.5V DC

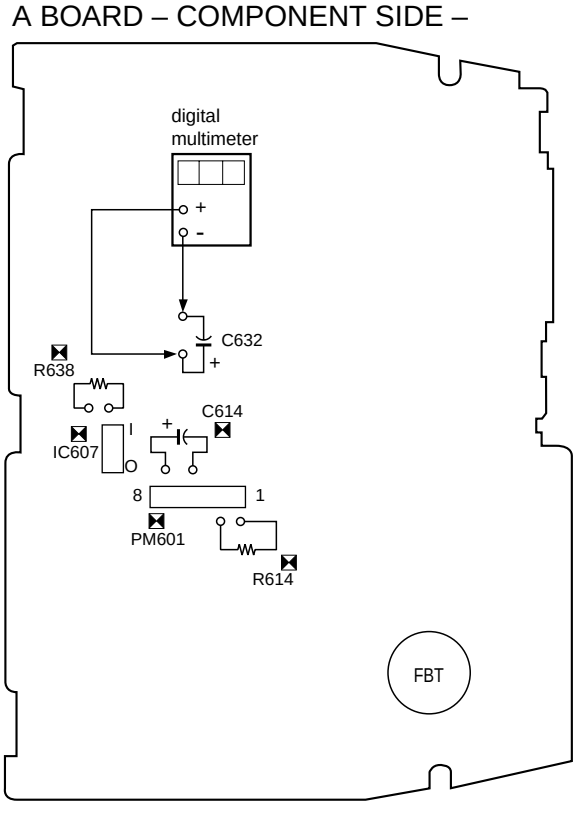



**Fig.4-2**

### 3. CONFIRMATION AFTER EXCHANGED IC607 AND R638

Confirm the voltage value of +B line voltage satisfying with standard value when exchanged IC607 and R638.

### 4. CONFIRMATION AFTER EXCHANGED PM601, R614 AND C614

Confirm the protection circuit satisfying with standard value.

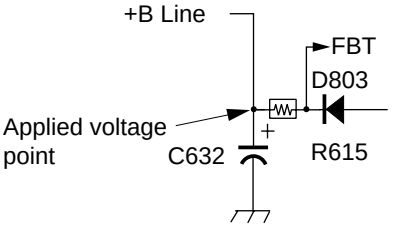


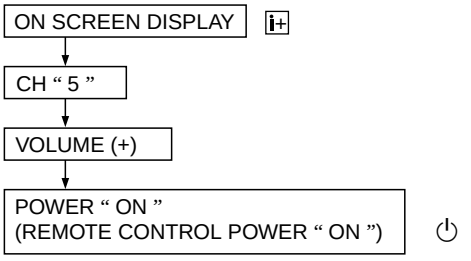

**Fig.4-1**

# SECTION 5
# CIRCUIT ADJUSTMENT

## 5-1. ADJUSTMENTS WITH COMMANDER

### 1. ENTERING SERVICE MODE

1) Turn on the main power of the set and enter into stand-by mode.
2) Press the following sequence of buttons on the Remote Control Commander.




### 2. TO READ THE MEMORY

1) Set to service mode.
2) When push these buttons [7] → [0] on the remote commander, it would read all item's adjustment value and switch set-up value which written in the memory.

**Note:** Do not read before "standard value" writing when exchange the MEMORY IC002.

### 3. PICTURE ADJUSTMENT

1) Select adjustment item number of service mode by [1] and [4] buttons on the remote commander.
2) Adjust [3] and [6] buttons to satisfy set-up value and picture condition of the screen.

### 4. WRITE TO THE MEMORY

- After adjusted, write to the MEMORY by [MUTE] and [0] buttons and push [0] button while green "light" word indicated on the picture display (about 3 seconds). It takes about 1 second to complete the writing to the MEMORY. When red "light" displayed turns to "G" and that makes writing completely finish.

Color of the screen displayed light word.

[MUTE] button on ..... Green word
[0] button on ..... Red word

### 5. RELEASE THE SERVICE MODE

- Turn off TV set and turn on again or turn off by the remote commander, and turn off by the remote commander again by stand-by state to disappear serivce display and set to normal TV mode.

### 6. WRITING "STANDARD VALUE"

1) Set to service mode.
2) When push [5] button on the remote commander green colored "INITIAL write" indicates on the screen right above. Continuing to press [0] button while words are displaying (about 3 seconds). Display turns to red colored "INITIAL write" then the screen become pitch-dark and select 1ch about 5 seconds after. Then it turns green colored "G" display.

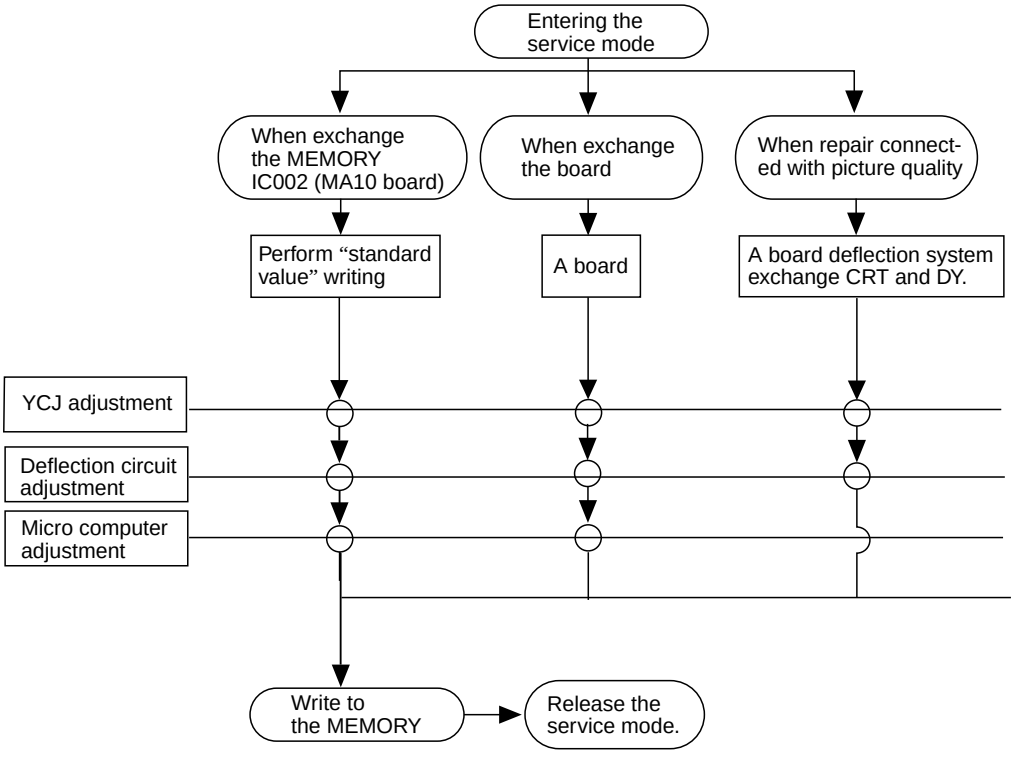
   Perform writing "standard value" standard data in micro computer will write to the MEMORY and set to initialization state all.

**Note:** When exchange only MEMORY IC002, perform "standard value" writing in the begginning.

## 5-2. ADJUSTMENT METHOD

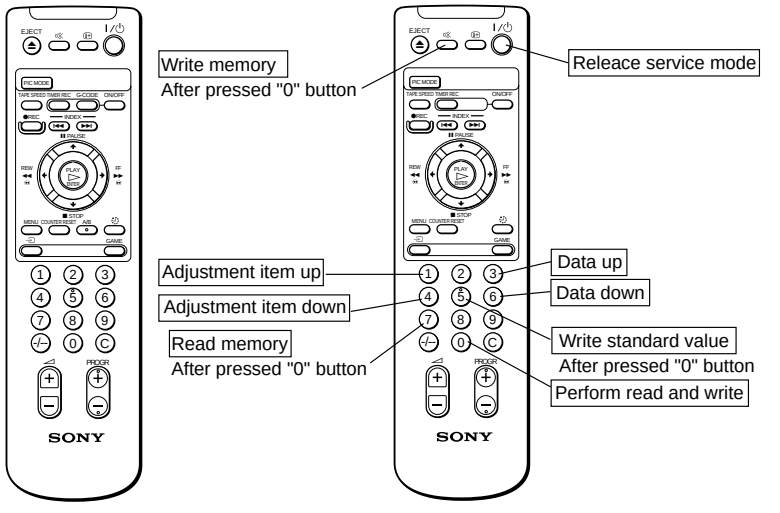
Service adjustment to this model can be performed with the supplied Remote Control Commander RM-955, 956.

- **HOW TO ENTER INTO SERVICE MODE**


Entering the service mode
When exchange the MEMORY IC002 (MA10 board)
When exchange the board
When repair connect-ed with picture quality
Perform “standard value” writing
A board
A board deflection system exchange CRT and DY.
YCJ adjustment
Deflection circuit adjustment
Micro computer adjustment
Write to the MEMORY
Release the service mode.

Note : • Write to the MEMORY every performing one item adjustment.
• Before writing to the MEMORY adjusted data would not memorize when turn off.

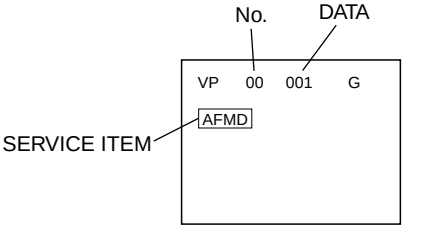
- **REMOTE COMMANDER'S FUNCTION IN SERVICE MODE**




**RM-955**
(Same as RM-956)

**RM-956**

- **SERVICE MODE DISPLAY**



## 5-3. SERVICE DATA

| No. | DISP | DATA RANGE | STANDARD DATA | ITEM | DEVICE |
|---|---|---|---|---|---|
| VP0 | AFC | 00-03 | 00 | AFC LOOP GAIN SWITCHING | CXA2130S (Y/C/J) |
| VP1 | VPOS | 00-3F | 21 | V POSITION | |
| VP2 | VSIZ | 00-3F | 21 | V SIZE | |
| VP3 | SCOR | 00-0F | 07 | S CORRECTION | |
| VP4 | VLIN | 00-0F | 07 | V LINIARITY | |
| VP5 | HPOS | 00-3F | 1E | HORIZONTAL POSITION | |
| VP6 | HSIZ | 00-3F | 21 | H SIZE | |
| VP7 | AFBW | 00-0F | 07 | AFC BOW | |
| VP8 | AFAG | 00-0F | 07 | AFC ANGLE | |
| VP9 | TRAP | 00-0F | 07 | TRAPEZIUM | |
| VP10 | PAMP | 00-3F | 0B | PIN AMPLITUDE | |
| VP11 | UCPN | 00-3F | 1F | UPPERSIDE CORNER PIN | |
| VP12 | LCPN | 00-3F | 1F | LOWERSIDE CORNER PIN | |
| VP13 | HBLK | 00-01 | 00 | H BLANKING | |
| VP14 | LBLK | 00-0F | 07 | LEFT H BLANKING | |
| VP15 | RBLK | 00-0F | 07 | RIGHT H BLANKING | |
| VP16 | VUND | 00-01 | 00 | V UNDER SCAN | |
| VP17 | EHT | 00-0F | 07 | EHT COMP | |
| VP18 | HSS | 00-01 | 00 | SLICE LEVEL OF H SYNC SEPARATION | |
| VP19 | VSS | 00-01 | 00 | SLICE LEVEL OF V SYNC SEPARATION | |
| VP20 | HMSK | 00-01 | 01 | H MASK | |
| VP21 | RAMP | 00-3F | 16 | R DRIVE | |
| VP22 | GAMP | 00-3F | 1F | G DRIVE | |
| VP23 | BAMP | 00-3F | *1F | B DRIVE | |
| VP24 | RCUT | 00-0F | 07 | R CUTOFF | |
| VP25 | GCUT | 00-0F | 07 | G CUTOFF | |
| VP26 | BCUT | 00-0F | 07 | B CUTOFF | |
| VP27 | SCOL | 00-3F | 19 | SUB COLOR | |
| VP28 | SHUE | 00-1F | 07 | SUB HUE FOR RF INPUT | |
| VP29 | SBRT | 00-3F | 1F | SUB BRIGHT | |
| VP30 | SSHP | 00-0F | 05 | SUB SHARPNESS | |
| VP31 | SHPF | 00-01 | 00 | SHARPNESS F0 SWITCHING | |
| VP32 | PREL | 00-01 | 00 | PRE/OVER-SHOOT RATIO SWITCHING | |
| VP33 | GAMM | 00-03 | 02 | GAMMA CORRECTION | |
| VP34 | ABLM | 00-01 | *01 | ABL MODE | |
| VP35 | VTH | 00-01 | 01 | ABL VTH | |
| VP36 | DYCL | 00-01 | 01 | DYNAMIC COLOR | |
| VP37 | YDC | 00-01 | 01 | DC TRAN | |
| VP38 | RON | 00-01 | 01 | R ON | |
| VP39 | GON | 00-01 | 01 | G ON | |
| VP40 | BON | 00-01 | 01 | B ON | |
| VP41 | CDMD | 00-03 | 00 | COUNT DOWN MODE | |
| VP42 | HOSC | 00-0F | 07 | H VCO'S OSCILLATION | |
| VP43 | VMSW | 00-01 | 00 | VM SW(0:ON,1:OFF) | |
| VP44 | YDE | 00-0F | 08 | Y DELAY | |
| VP45 | PAF | 00-03 | 00 | PB AFC | |
| VP46 | IDS | 00-03 | 01 | ID START | |
| VP47 | IDP | 00-03 | 01 | ID STOP | |
| VP48 | IDL | 00-03 | 02 | ID LEVEL | |
| VP49 | BELL | 00-3F | 22 | BELL F0 | |
| VP50 | VSHU | 00-0F | 06 | SUB HUE FOR LINE INPUT,PB | |

| No. | DISP | DATA RANGE | STANDARD DATA | ITEM | DEVICE |
|---|---|---|---|---|---|
| MS0 | NDL | 00-FF | 52 | NICAM SEARCH DELAY | |
| MS1 | AGC | 00-01 | 01 | AGC SWITCH | |
| MS2 | REL | 00-3F | 28 | AGC GAIN | |
| MS3 | CRM | 00-01 | 00 | CARRIER MUTING | |
| MS4 | ACO | 00-01 | 01 | AUDIO CLOCK OUT | |
| MS5 | FP | 00-7F | 1B | | |
| MS6 | FPM | 00-7F | 32 | | |
| MS7 | FH | 00-7F | 2D | | |
| MS8 | FHM | 00-7F | 65 | | |
| MS9 | NIP | 00-7F | 6D | NICAM PRESCALE | |
| MS10 | ERR | 00-FF | 50 | AUTO-FM SWITCH THRESHOLD | |
| MS11 | VOL | 00-FF | 6D | INTELLIGENT VOLUME | |

| No. | DISP | DATA RANGE | STANDARD DATA | ITEM | DEVICE |
|---|---|---|---|---|---|
| OP0 | OSDH | 00-3F | 06 | OSD HORIZONTAL POSITION | CXP85460 (µ-COM) |
| OP1 | NS | 00-01 | 00 | MENU FOR NS(0:OFF,1:ON) | |
| OP2 | ODL | 00-FF | 08 | ON DELAY TIMER | |
| OP3 | HDCG | 00-03 | 01 | HEADCLOG DETECT(0:OFF,1:ON) | |
| OP4 | APC | 00-01 | 00 | PLL-switch | |
| OP5 | ID0 | 00-01 | 00 | | |
| OP6 | ID1 | 00-01 | 00 | | |
| OP7 | ID2 | 00-01 | 01 | | |
| OP8 | ID3 | 00-01 | 00 | | |

## 5-4. A BOARD ADJUSTMENT

### 1. H OSC ADJUSTMENT

1) Input select should be selected LINE input (no signal).
2) Connect a frequency counter to TP801 (A board).
3) Adjust service data "VP42" (HOSC) to become 15.690kHz ± 25Hz.

### 2. PICTURE QUALITY ADJUSTMENT

#### 2-1. SUB HUE, SUB COLOR adjustment. (For RF input)

1) Receive RF NTSC COLOR BAR signal (B OUT signal).
2) Color Condition
   - Color ..... 50%
   - HUE center ..... 50%
   - Picture ..... 80%

   * H white condition is "OFF" (VP36 : DYCL "= 00")
3) Adjust service data (VP28 : SHUE) for CN308 ⑥ pin B OUT waveform shown $V_{B2} = V_{B3}$ (SUB HUE).
4) Adjust service data (VP27 : SCOL) for CN308 ⑥ pin B out waveform shown $V_{B1} = V_{B4}$ (SUB COLOR).

**Note :** Repeat the above steps 2) and 3) untill an optimum value is obtained.

5) Add the figure of each step of SUB HUE and SUB COLOR shown below to the above adjustment data.

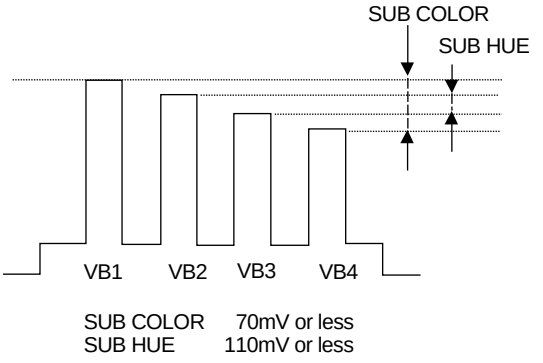



**Fig.5-1**

   - SUB HUE : From just flat VP28 : SHUE (TV) 0 STEP
   - SUB COLOR : From just flat VP27 : SCOL 0 STEP

6) Write SUB HUE, SUB COLOR for "VIDEO" the values which are same as 4).

#### 2-2. SUB HUE adjustment (For LINE input)

1) Input the NTSC COLOR BAR Signal to LINE INPUT.
2) Color Condition
   - Color ..... 50%
   - HUE center ..... 50%
   - Picture ..... 80%

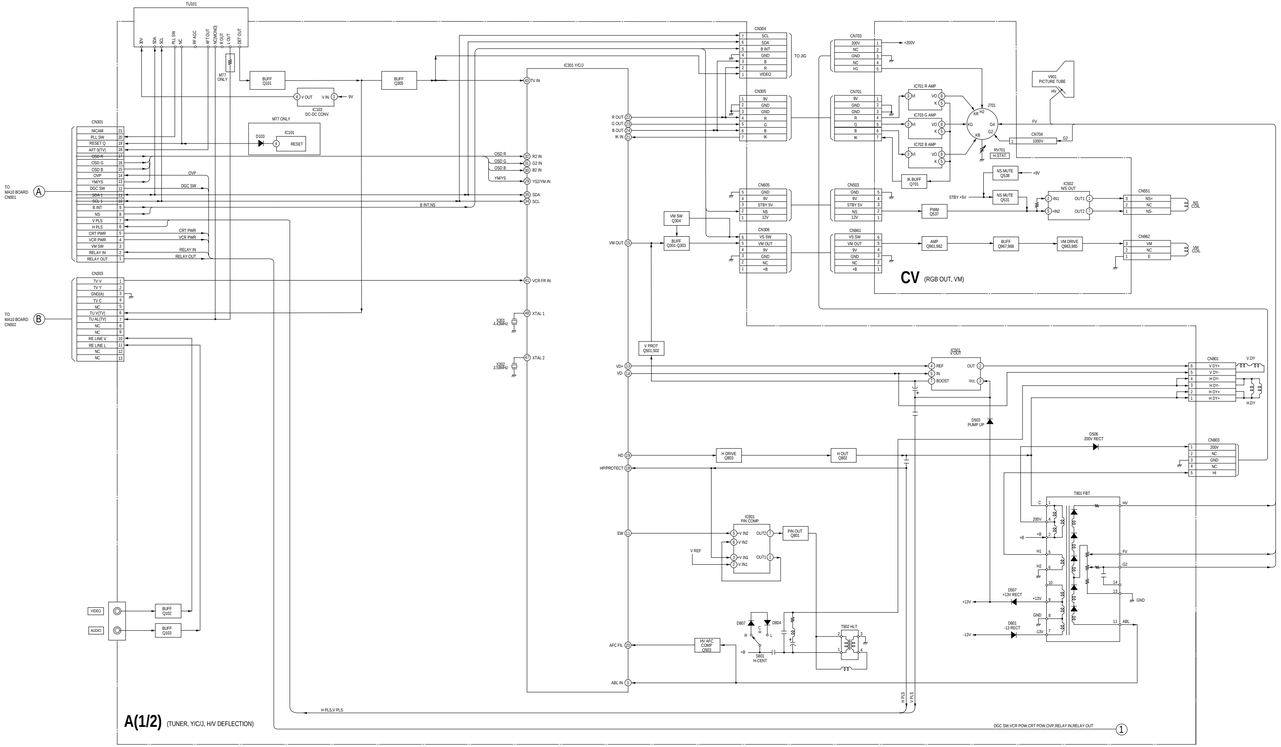
   * H white condition is "OFF" (VP36 : DYCL = "00")
3) Adjust service data (VP50 : VSHU)for CN308 ⑥ pin B OUT waveform shown $V_{B2} = V_{B3}$.
4) Write SUB HUE (for LINE INPUT)

MEMO

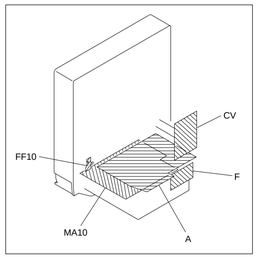
MEMO

# SECTION 6
# DIAGRAMS

## 6-1. BLOCK DIAGRAMS



## 6-2. CIRCUIT BOARDS LOCATION




## 6-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF
  Capacitors without voltage indication are all 50V.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power: 1/4W(CHIP:1/10W)

- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-chassis.
- The components identified by **H** in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
  (Refer to PM601,R614,C614,IC607 and R638 adjustment on Page 70 .)
- When replacing the part in below table, be sure to perform the related adjustment.

| Adjustment (**H**) |
|---|
| PM601,R614,C614,IC607, R638 ....., A Board |

- Readings are taken with a color-bar signal input.
- Readings are taken with a 10MΩ digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform reference.
- : B + line
- : B – line.
- : signal path.

Reference information

| | | |
|---|---|---|
| RESISTOR | : RN | METAL FILM |
| | : RC | SOLID |
| | : FPRD | NONFRAMMABLE CARBON |
| | : FUSE | NONFRAMMABLE FUSIBLE |
| | : RW | NONFRAMMABLE WIREWOUND |
| | : RS | NONFRAMMABLE METAL OXIDE |
| | : RB | NONFRAMMABLE CEMENT |
| | : ※ | ADJUSTMENT RESISTOR |
| COIL | : LF-8L | MICRO INDUCTOR |
| CAPACITOR | : TA | TANTALUM |
| | : PS | STYROL |
| | : PP | POLYPROPYLENE |
| | : PT | MYLAR |
| | : MPS | METALIZED POLYESTER |
| | : MPP | METALIZED POLYPROPYLENE |
| | : ALB | BIPOLAR |
| | : ALT | HIGH TEMPERATURE |
| | : ALR | HIGH RIPPLE |

### Terminal name of semiconductors in silk screen printed circuit (※)

| | Device | Printed symbol | Terminal name | Circuit |
|---|---|---|---|---|
| ① | Transistor | T | Collector / Base / Emitter | |
| ② | Transistor | — | Collector / Base / Emitter | |
| ③ | Diode | | Cathode / Anode | |
| ④ | Diode | T | Cathode / Anode / (NC) | |
| ⑤ | Diode | — | Cathode / Anode / (NC) | |
| ⑥ | Diode | T | Common / Anode / Cathode | |
| ⑦ | Diode | — | Common / Anode / Cathode | |
| ⑧ | Diode | T | Common / Anode / Anode | |
| ⑨ | Diode | — | Common / Anode / Anode | |
| ⑩ | Diode | T | Common / Cathode / Cathode | |
| ⑪ | Diode | — | Common / Cathode / Cathode | |
| ⑫ | Diode | I | Anode / Cathode / Anode / Anode / Cathode / Anode | |

(Chip semiconductors that are not actually used are included.)

Ver.1.5

**Note: The components identified by shading and mark B are critical for safety. Replace only with part nummber specified.**





### A BOARD

**IC**

| | |
|---|---|
| IC101 | C-4 |
| IC103 | A-4 |
| IC301 | E-2 |
| IC501 | C-1 |
| IC601 | E-7 |
| IC602 | C-4 |
| IC603 | D-7 |
| IC604 | D-4 |
| IC605 | D-6 |
| IC606 | C-6 |
| IC607 | D-4 |
| IC608 | D-2 |
| IC801 | E-1 |

**TRANSISTOR**

| | | |
|---|---|---|
| | | * |
| Q101 | B-4 | ① |
| Q102 | A-4 | ① |
| Q103 | A-4 | ① |
| Q301 | D-1 | ① |
| Q302 | D-2 | ① |
| Q303 | D-2 | ① |
| Q304 | D-2 | ① |
| Q305 | E-3 | ① |
| Q501 | D-2 | ① |
| Q502 | D-2 | ① |
| Q503 | D-1 | ① |
| Q601 | D-5 | ① |
| Q602 | E-4 | ① |
| Q604 | E-4 | ① |
| Q605 | C-5 | - |
| Q606 | D-3 | ① |
| Q607 | C-5 | ① |
| Q608 | D-4 | ① |
| Q609 | C-7 | ① |
| Q610 | D-4 | ① |
| Q801 | C-2 | - |
| Q802 | B-2 | - |
| Q803 | B-3 | - |

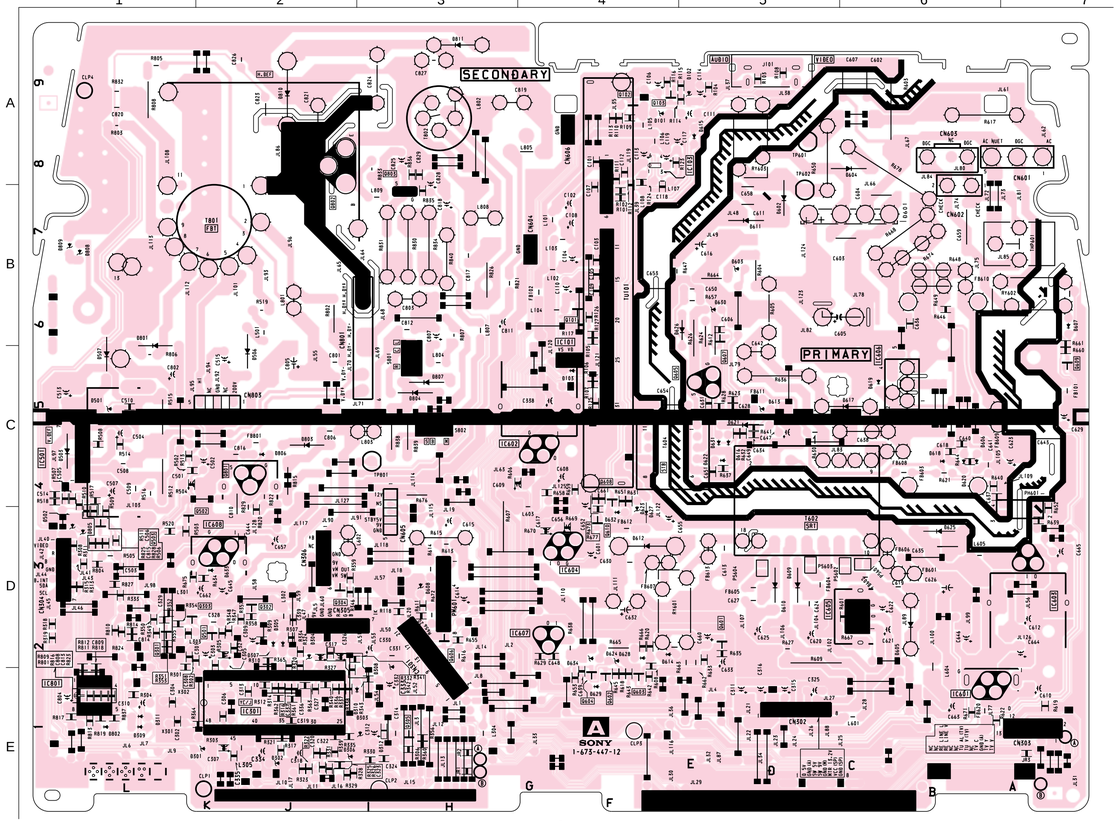
**DIODE**

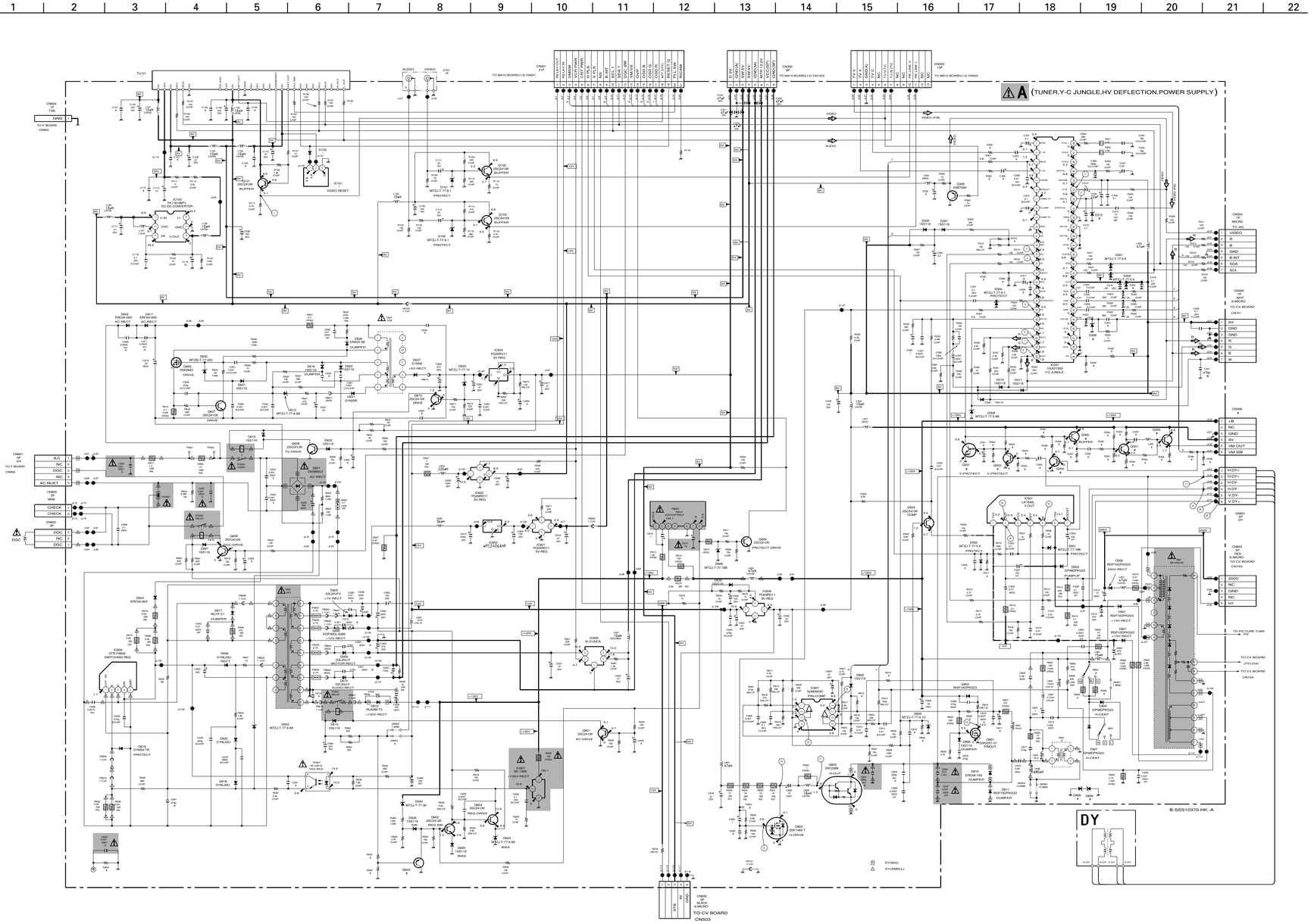
| | | |
|---|---|---|
| | | * |
| D101 | A-4 | |
| D102 | A-5 | |
| D103 | C-4 | |
| D301 | E-2 | |
| D302 | E-2 | |
| D304 | E-2 | |
| D305 | D-2 | |
| D307 | D-2 | |
| D308 | E-3 | |
| D501 | C-1 | |
| D502 | D-1 | |
| D503 | C-1 | |
| D506 | C-2 | |
| D507 | C-1 | |
| D601 | B-6 | |
| D602 | B-5 | |
| D603 | B-5 | |
| D604 | B-6 | |
| D605 | D-6 | |
| D606 | C-6 | |
| D607 | C-7 | |
| D608 | D-3 | |
| D609 | D-5 | |
| D610 | D-5 | |
| D611 | B-5 | |
| D612 | D-4 | |
| D613 | C-5 | |
| D614 | D-4 | |
| D615 | A-5 | |
| D616 | C-5 | |
| D617 | C-6 | |
| D618 | C-6 | |
| D619 | C-6 | |
| D620 | C-6 | |
| D621 | C-5 | |
| D622 | C-5 | |
| D623 | D-4 | |
| D624 | E-4 | |
| D625 | D-6 | |
| D626 | E-4 | |
| D627 | D-4 | |
| D628 | C-5 | |
| D629 | E-4 | |
| D630 | B-5 | |
| D631 | C-5 | |
| D632 | D-4 | |
| D633 | D-2 | |
| D634 | D-4 | |
| D801 | C-1 | |
| D802 | A-1 | |
| D803 | C-2 | |
| D804 | A-3 | |
| D805 | D-1 | |
| D806 | C-2 | |
| D807 | A-3 | |
| D810 | A-2 | |
| D811 | A-3 | |

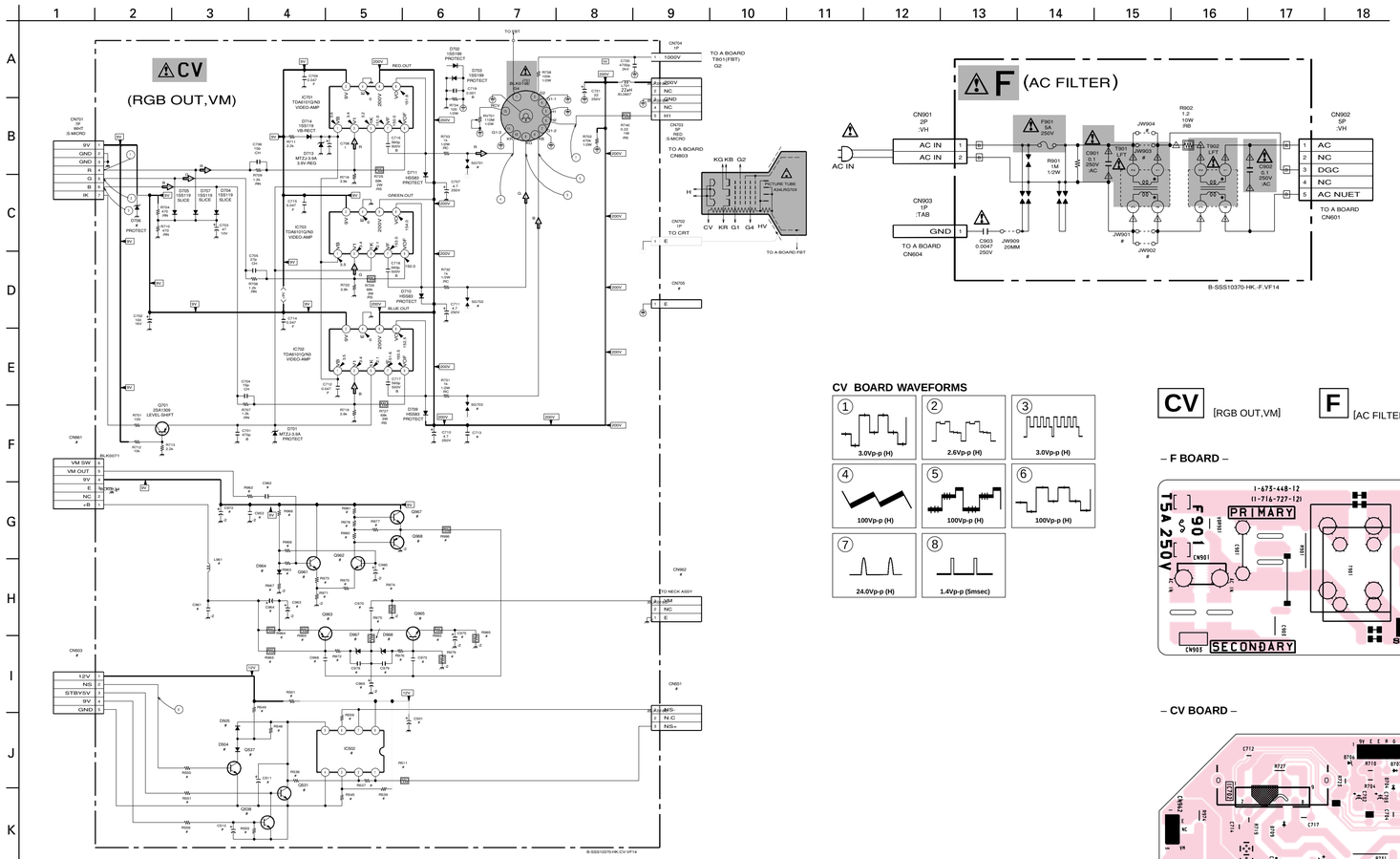
**NOTE:**
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.








⚠A (TUNER,Y-C JUNGLE,HV DEFLECTION,POWER SUPPLY)
B-SSS1037D-HK-A
DY
TO CV BOARD CN503
TO MA10 BOARD(1/3) CN501
TO MA10 BOARD(1/3) CN502
TO MA10 BOARD(1/3) CN503
TO PICTURE TUBE
TO CV BOARD CN704
TO CV BOARD CN703
TO CV BOARD CN801
TO CV BOARD CN804
TO CV BOARD CN805
TO CV BOARD CN806
TO F BOARD CN900
TO F BOARD CN902
TO F BOARD CN903
TO F BOARD CN904
TO F BOARD CN905
TO F BOARD CN906
TO F BOARD CN907
TO F BOARD CN908
TO F BOARD CN909
TO F BOARD CN910
TO F BOARD CN911
TO F BOARD







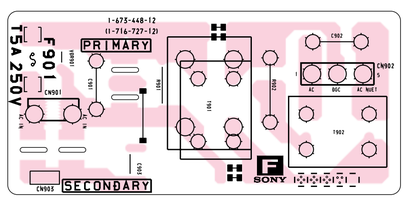
## CV BOARD WAVEFORMS



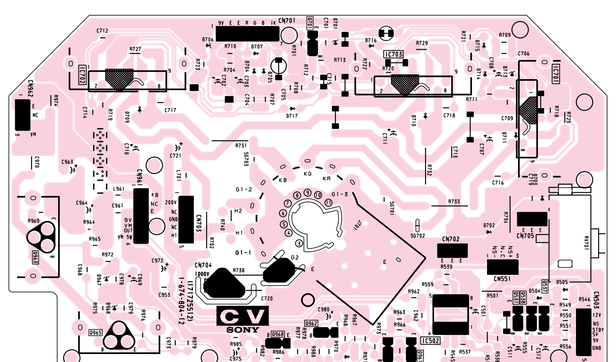

**CV** [RGB OUT,VM]

**F** [AC FILTER]

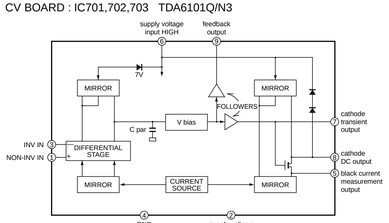
– F BOARD –



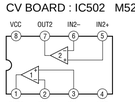

– CV BOARD –




CV BOARD : IC701,702,703 TDA6101Q/N3




CV BOARD : IC502 M5216P




**NOTE:**
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

# VIDEO section

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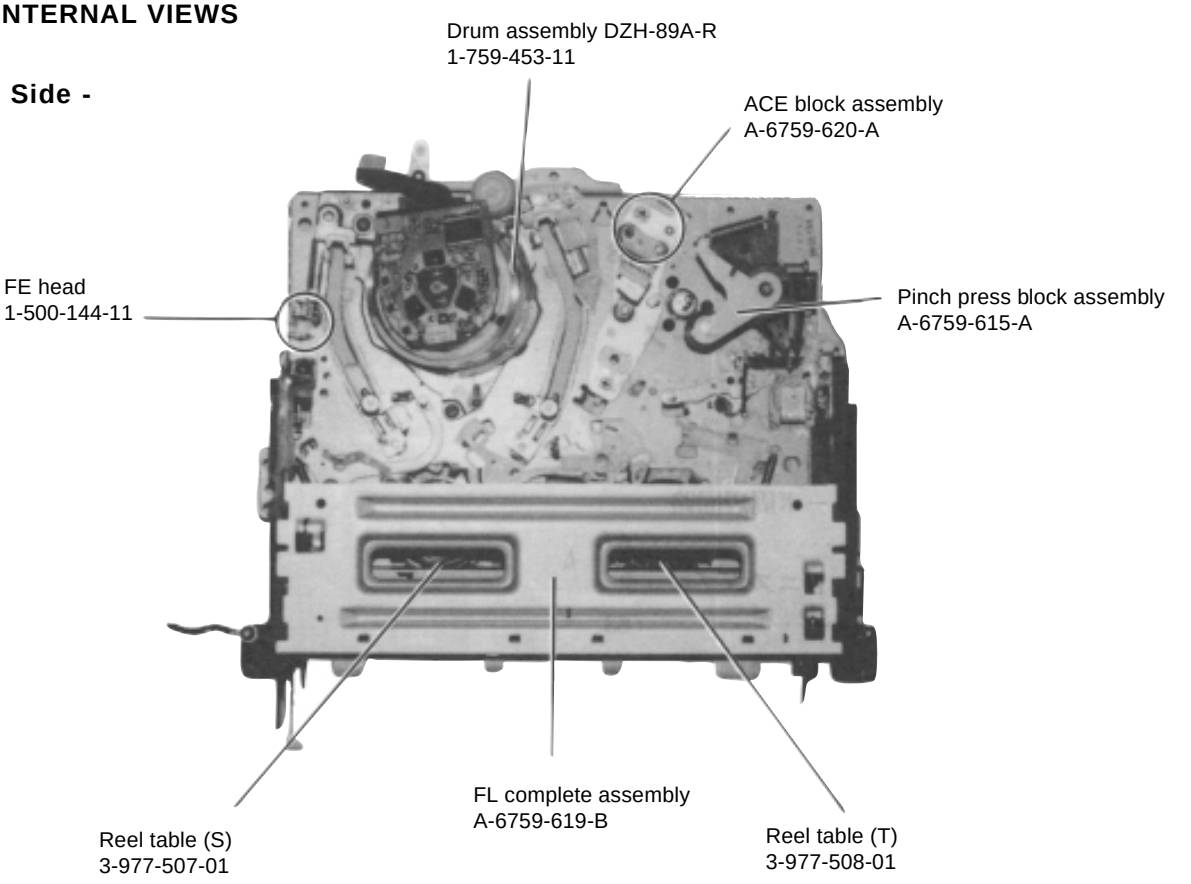
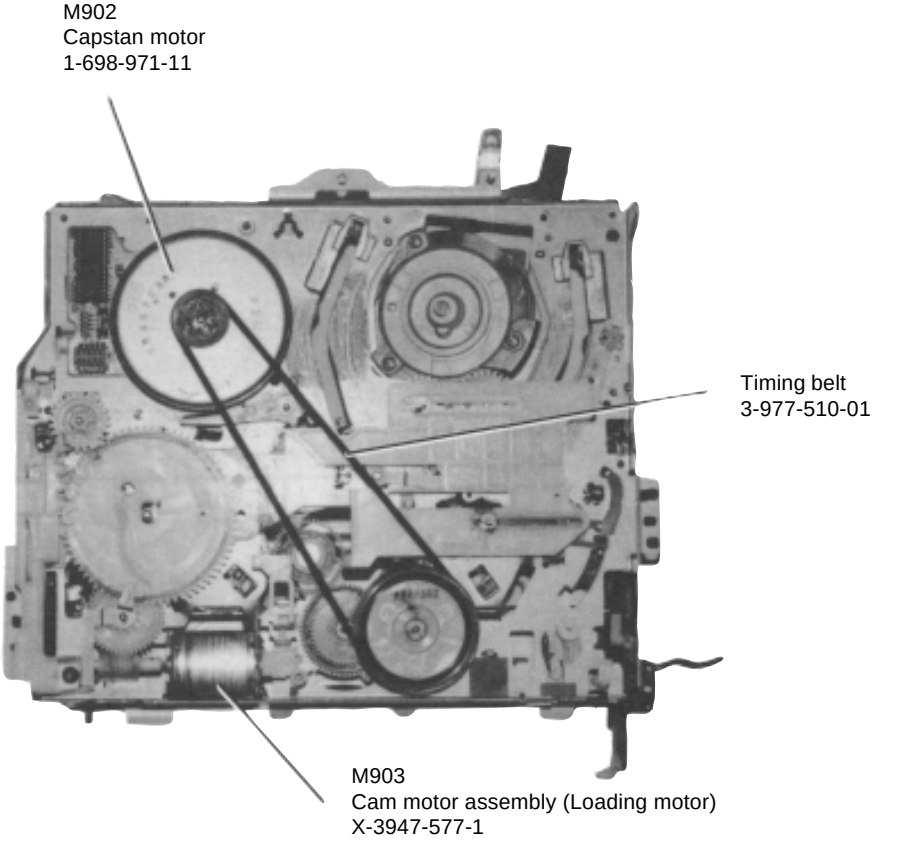
# SECTION 1
# GENERAL

## 1-1. INTERNAL VIEWS

**- Top Side -**

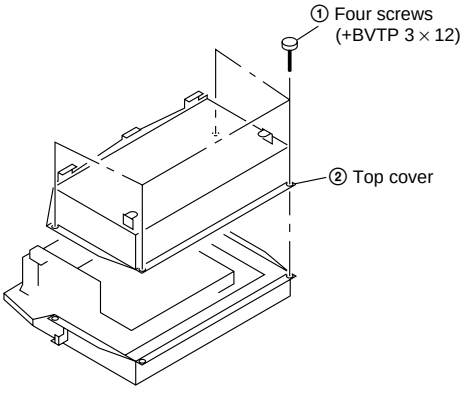



**- Bottom Side -**

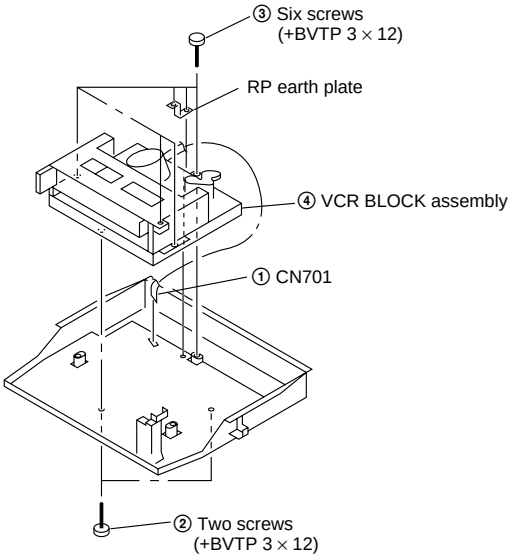


# SECTION 2
# DISASSEMBLY

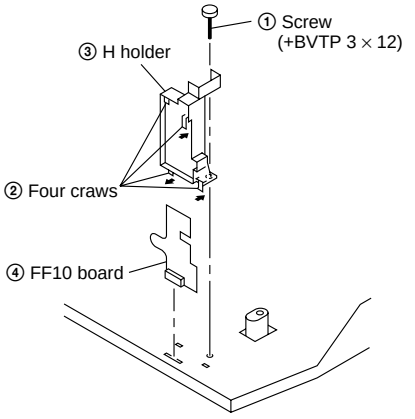
## 2-1. TOP COVER REMOVAL



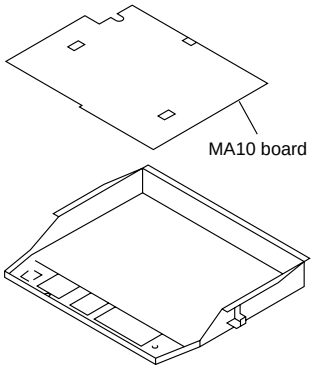

## 2-2. VCR BLOCK ASSY REMOVAL



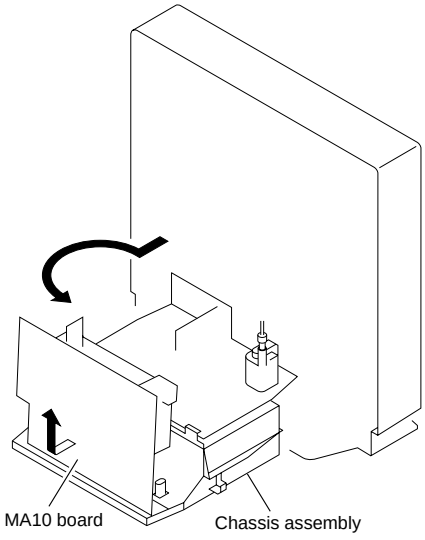

## 2-3. FF10 BOARD REMOVAL




## 2-4. MA10 BOARD REMOVAL




## 2-5. SERVICE POSITION (MA10 BOARD)



# SECTION 3
# CIRCUIT ADJUSTMENTS

Necessary items and indications for total adjustment of electric circuit of this unit will be described in this chapter.

## [ INSTRUMENTS TO BE USED ]

1) Color TV
2) Signal or dual trace type oscilloscope, band more than 30 MHz, delay, as provided.
3) Frequency counter (4 digits or more)
4) PAL pattern generator
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Attenuator
9) Distortion meter
10) Alignment tape
    Part code : H7099052H (MH-2)

## [ CONNECTION ]

Unless otherwise specified, connect and adjust the measurement equipment as follows.

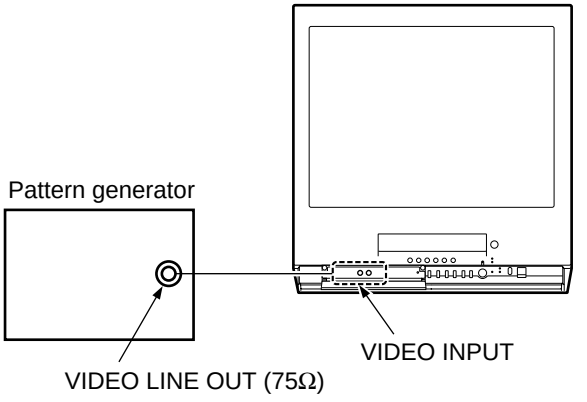



**Fig.3-1**

## [ SET-UP FOR ADJUSTMENT ]

The video signal from the pattern generator is used as adjustment signal for electrical adjustment. This video signal should meet the requirement. Connect the oscilloscpe to the video input terminal on the MF 1 board and make sure that the amplitudes of sync signal of video signal, video portion and burst signal are flat at approximately 0.3, 0.7 and 0.3 V, respectively, and that the level ratio of the burst signal and “red signal” are 0.30 : 0.66, Fig.3-2 shows video signals (color bars) used in adjusting the electrical adjustment.

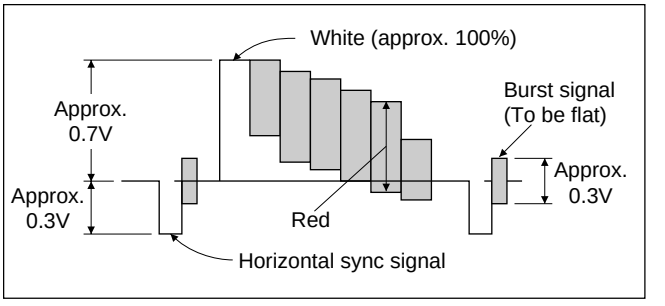



**Fig.3-2**

**Alignment Tape (MH-2)**

| | Time | Video signal | Audio signal |
|---|---|---|---|
| 1 | 10 minutes | Starir-step | 6kHz |
| 2 | 5 minutes | - | 3kHz |
| 3 | 10 minutes | Color bar | 1kHz |
| 4 | 3 minutes | RF sweep | - |

## [ SPECIFIED INPUT/OUTPUT LEVEL IMPEDANCE ]

**Input/Output terminal**

| | |
|---|---|
| Video input | Pin jack |
| | Input signal : 1Vp-p, 75Ω, unbalanced |
| | Sync negative |
| AUDIO LINE IN | Pin jack |
| | Input level : -7.5dBs |
| | (0dBs=0.775Vrms) |
| | Input impedance : More than 47kΩ |

## X'tal OSC CHECK

| | |
|---|---|
| Mode | PB |
| Signal | Alignment tape, Stair step |
| Measurement Point | MA10 board Q823 emitter(NTSC)<br>IC802 ㊾pin(PAL) |
| Measurement Equipment | Oscilloscope |
| Specified Value | 500±200mVp-p |

**Check:** 1)Confirm the frequency is 3.579545MHz±82Hz(NTSC), and 4.433619MHz±100Hz(PAL).
2)Confirm the waveform amplitude is 500±200mVp-p.

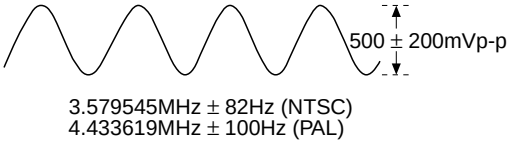



**Fig.3-3**

## CARRIER DEVIATION CHECK

| | |
|---|---|
| Mode | E-E |
| Signal | Color bar |
| Measurement Point | MA10 board IC802 ⑱pin |
| Measurement Equipment | Spectrum Analyzer |
| Specified Value | $f_2$-$f_1$=1.00±0.08MHz |

**Check:** Confirm $f_2$-$f_1$=1.00±0.08MHz
Confirm $f_1$=3.40±0.13MHz(NTSC), and 3.80±0.13MHz(PAL)

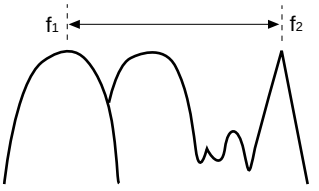



**Fig.3-5**

## SYNC AGC CHECK

| | |
|---|---|
| Mode | E-E |
| Signal | Color bar |
| Measurement Point | MA10 board Q830 emitter |
| Measurement Equipment | Oscilloscope |
| Specified Value | 1.0±0.1Vp-p |

**Check:** Confirm the waveform amplitude is 1.0±0.1Vp-p.

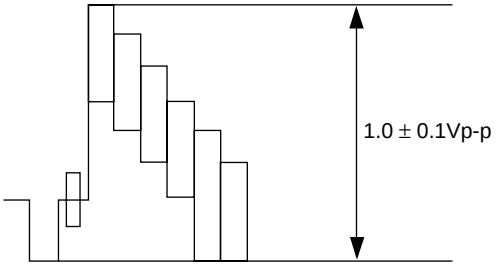



**Fig.3-4**

## WHITE/DARK CLIP CHECK

| | |
|---|---|
| Mode | E-E |
| Signal | Color bar |
| Measurement Point | MA10 board IC802 ㊲pin |
| Measurement Equipment | Oscilloscope |
| Specified Value | 190±20%(White), 55±20%(Dark) |

Preparation: Add 3.3kΩ resistor between IC802 ㊷pin and GND.
**Check:** Taking the height from sync to white level as 100%, check white clip and dark clip.

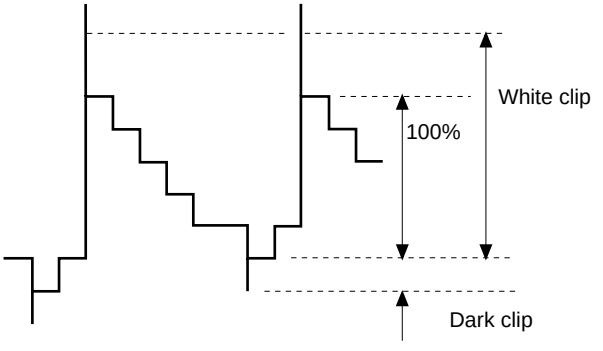



**Fig.3-6**

## REC Y LEVEL CHECK

| | |
|---|---|
| Mode | E-E(SP) |
| Signal | No signal |
| Measurement Point | MA10 board IC802 ⑱pin |
| Measurement Equipment | Oscilloscope |
| Specified Value | 240±70mVp-p(NTSC)<br>260±70mVp-p(PAL) |

**Check:** Confirm the Vp-p of the waveform is 220±70mVp-p.

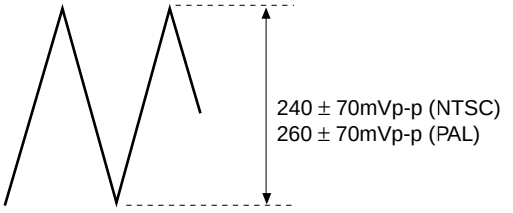



**Fig.3-7**

## PB Y LEVEL CHECK

| | |
|---|---|
| Mode | PB |
| Signal | Color bar |
| Measurement Point | MA10 board Q830 emitter |
| Measurement Equipment | Oscilloscope |
| Specified Value | 1.0±0.1Vp-p |

**Check:** Confirm the Vp-p of the waneform is 1.0±0.1Vp-p.

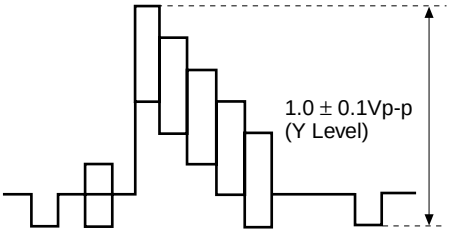



**Fig.3-9**

## REC CHROMA CHECK

| | |
|---|---|
| Mode | REC(SP) |
| Signal | Color bar |
| Measurement Point | MA10 board IC802 ⑭pin |
| Measurement Equipment | Oscilloscope |
| Specified Value | 350±60mVp-p |

**Check:** Confirm the Vp-p of the waveform is 350±60mVp-p.

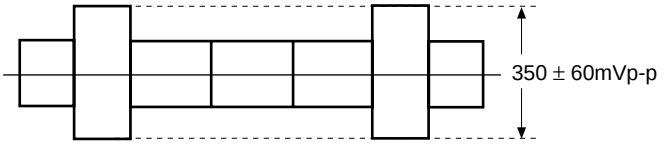



**Fig.3-8**

## SWITCHING LOCATION ADJUSTMENT WHEN CHANGE DRUM

### 1.VIDEO SWITCHING LOCATION ADJUSTMENT

1) Connect between CN1004 pin ② and pin ⑥ on MA10 board.
2) Insert switching over up tape(KRV-23PS)and push the play back key.
3) Push the channel + and-keys simultaneously.
4) Short instant between CN1004 pin ① and pin ⑥.(LED goes on and off)

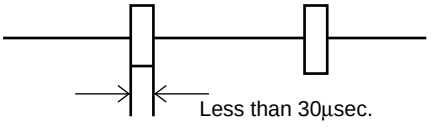



**Fig.3-10**

5) Adjust the channel+/- keys of the set so that waveform width of CN702 pin ② become minimum.(less than 30µsec.)
6) Push the pause key of the set.(LED wink disappear)
7) Remove the connection between CN1004 pin ② and pin ⑥.

# SECTION 4
# INTERFACE, IC PIN FUNCTION DESCRIPTION

## 4-1. µ-COM PORT FUNCTION DESCRIPTION (MA10 BOARD IC001)

| Pin No. | Signal | I/O | Function |
|---|---|---|---|
| 1 | S SEL F | I | S-INPUT SELECT (FRONT) |
| 2 | $\overline{\text{S SEL R}}$ | I | S-INPUT SELECT (REAR) |
| 3 | ST | I | TU STEREO MODE |
| 4 | BIL | I | TU BILINGUAL MODE |
| 5 | DGC SW | – | DGC ON/OFF CONTROL |
| 6 | ST/ $\overline{\text{MONO}}$ | I | SET MODE STEREO/$\overline{\text{MONO}}$ |
| 7 | – | – | |
| 8 | $\overline{\text{MAIN}}$ /SUB | O | TU $\overline{\text{MAIN}}$/SUB CONTROL |
| 9 | F MONO | O | TU FOCE MONO CONTROL |
| 10 | VM SW | O | VM ON/OFF CONTROL |
| 11 | GP A | I | "REC PON" SW A |
| 12 | GP B | I | "REC PON" SW B |
| 13 | GP C | I | "REC PON" SW C |
| 14 | ASURA CS | O | CHIP SELECT FOR ASURA |
| 15 | $\overline{\text{SLAVE RESE}}$ | O | RESET FOR ASURA |
| 16 | $\overline{\text{J CLK}}$ | O | JUST CLOCK DISABLE ("H" : DISAB) |
| 17 | $\overline{\text{FACT}}$ | I | FACTORY MODE |
| 18 | $\overline{\text{1TU}}$ /2TU | I | SET MODE $\overline{\text{1TU}}$/2TU |
| 19 | JUST CLOCK | I | JUST CLOCK DET INPUT |
| 20 | SIRCS | I | REMOCON SIGNAL IN |
| 21 | HSYNC 1 | I | H SYNC DET INPUT (REC) |
| 22 | HSYNC 0 | I | H SYNC DET INPUT (TV) |
| 23 | SI | I | SIGNAL DATA INPUT |
| 24 | SO | O | SIGNAL DATA OUTPUT |
| 25 | SCK | O | SIGNAL CLOCK OUTPUT |
| 26 | Vss | – | |
| 27 | B INT | I | BUS INT |
| 28 | X TAL | – | |
| 29 | EXTAL | – | |
| 30 | $\overline{\text{RESET}}$ | – | |
| 31 | A MUTE | O | AUDIO MUTE |
| 32 | CLK OS | O | CHIP SELECT FOR RT CLOCK |
| 33 | KEY2 | I | KEY SCAN 2 |
| 34 | KEY1 | I | KEY SCAN 1 |
| 35 | AFT1 | I | AFT DET 1 |
| 36 | AFT0 | I | AFT DET 0 |
| 37 | OVP | I | OVP DET |
| 38 | G SW | I | "REC PON" SW |
| 39 | XLC | – | |
| 40 | EXLC | – | |
| 41 | OSD R | – | |
| 42 | OSD G | – | |
| 43 | OSD B | – | |
| 44 | I | – | |
| 45 | YS | – | |
| 46 | YM | – | |
| 47 | SDA1 | O | $1^2$C BUS DATA FOR YCJ etc |
| 48 | SDA0 | O | $1^2$C BUS DATA FOR NVM |
| 49 | SCL1 | O | $1^2$C BUS CHECK FOR YCJ etc |
| 50 | SCL0 | O | $1^2$C BUS CHECK FOR NVM |
| 51 | $\overline{\text{LED2}}$ | O | POWER LED |
| 52 | $\overline{\text{LED1}}$ | O | STBY LED |
| 53 | NS | O | NS COIL CONTROL (PWM) |
| 54 | VOL | O | VOLUME CONTROL (PWM) |
| 55 | MP | – | |
| 56 | NC | – | |
| 57 | Vdd | – | |
| 58 | Vss | – | |
| 59 | HPULSE | I | |
| 60 | VPULSE | I | |
| 61 | CRTPOW | O | CRT POWER ON |
| 62 | VCRPOW | O | VCR POWER ON |
| 63 | $\overline{\text{M SW}}$ | I | MAIN SW |
| 64 | SP MUTE | O | SPEAKER MUTE |

## 4-2. SYSTEM CONTROL-VIDEO BLOCK INTERFACE (MA10 BOARD IC402)

| Signal | Pin No. | I/O | STOP | FF | REW | TAPE THREADING | TAPE UNTHREADING | PB | PB · PAUSE | SLOW | X2 | PICTURE SEARCH CUE | PICTURE SEARCH REVIEW | REC | REC · PAUSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RF SW P (SW30) | IC402 ① | O | *1 | *1 | *1 | *1 | *1 | *1 | *1 | *1 | *1 | *1 | *1 | *1 | *1 |
| Q VD | IC402 ④ | O | L | L | L | L | L | *2 | *3 | *3 | *3 | *3 | *3 | L | L |
| $\overline{\text{V SYNC}}$ | IC402 ⑯ | I | *4 | *4 | *4 | *5 | *5 | *5 | *5 | *5 | *5 | *5 | *5 | *5 | *5 |

*1. 30Hz 50% duty pulse synchronizing with drum rotation.
*2. Normally “L” . “H” when the video signal is not detected.
*3. V period “H” pulse.
*4. “H” in the LP mode. Selected according to the recording mode.
*5. Selected according to the tape recording mode.

## 4-3. SYSTEM CONTROL-SERVO PERIPHERAL CIRCUIT INTERFACE (MA10 BOARD IC402)

| Signal | Pin No. | I/O | STOP | FF | REW | TAPE THREADING | TAPE UNTHREADING | PB | PB · PAUSE | SLOW | X2 | PICTURE SEARCH CUE | PICTURE SEARCH REVIEW | REC | REC · PAUSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REC CTL | IC402 ⑦ | O | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z | *1 | HI-Z |
| $\overline{\text{CAP STOP}}$ | IC402 ㉞ | O (O.D) | L | HI-Z (O.D) | HI-Z (O.D) | HI-Z (O.D) | HI-Z (O.D) | HI-Z (O.D) | L | *3 | HI-Z (O.D) | HI-Z (O.D) | HI-Z (O.D) | HI-Z (O.D) | HI-Z (O.D) |
| STEP PLS | IC402 ㊾ | O | L | L | L | L | L | L | L | *2 | L | L | L | L | L |
| $\overline{\text{PB CTL}}$ | IC402 ⑰ | I | H | *6 | *6 | | | *1 | H/L | *2 | *6 | *6 | *6 | *1 | H |
| DRUM PG | IC402 ⑱ | I | *4 | *1 | *1 | *5 | *5 | *1 | *1 | *1 | *1 | *1 | *1 | *1 | *1 |
| DRUM FG | IC402 ⑲ | I | *4 | *7 | *7 | *5 | *5 | *7 | *7 | *7 | *7 | *7 | *7 | *7 | *7 |
| CAP FG | IC402 ⑳ | I | H/L | *6 | *6 | *5 | *5 | *6 | H/L | *2 | *6 | *6 | *6 | *6 | H/L |
| CAP DA | IC402 ㉓ | O | *8 | *8 | *8 | *8 | *8 | *9 | *8 | *8 | *9 | *9 | *9 | *9 | *8 |
| DRUM DA | IC402 ㉔ | O | *10 | *10 | *10 | *10 | *10 | *10 | *10 | *10 | *10 | *10 | *10 | *10 | *10 |
| CTL RESET | IC402 ⑩ | I/O | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z | *11 | HI-Z | HI-Z | HI-Z | HI-Z | HI-Z |

*1. 30Hz 50% pulse.
*2. Pulse in tape running.
*3. Reverse logic pulse of STEP PLS.
*4. “L” when drum rotation stops.
*5. Unstable period pulse.
*6. Pulse of Period proportionate to tape speed.
*7. 360Hz pulse.
*8. Pulse in tape running.
*9. Approx. 2 msec. period “H” or “L” pulse.
*10. Approx. 1.5 msec. period “H” or “L” pulse.

## 4-4. SYSTEM CONTROL-MECHANISM BLOCK INTERFACE (MA10 BOARD IC402)

| Signal | Pin No. | I/O | EJECTED | CASSETTE LOADING | CASSETTE UNLOADING | TAPE THREADING | TAPE UNTHREADING | STOP | FF | REW | PB | PB · PAUSE | SLOW | X2 | PICTURE SEARCH CUE | PICTURE SEARCH REVIEW | REC | REC · PAUSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAM UN LOAD | IC402 ⑨ | O | HI-Z | H | L | H | L | *7 | *7 | *7 | *7 | *7 | *7 | *7 | *7 | *7 | *7 | *7 |
| CAM LOAD | IC402 ⑧ | O | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L |
| MODE 1 | IC402 ㉒ | I | H | L | L | *1 | *1 | H | H | H | H | H | H | H | H | L | H | H |
| MODE 2 | IC402 ㉑ | I | H | L | L | *1 | *1 | H | H | H | L | L | L | L | L | L | L | L |
| MODE 3 | IC402 ⑳ | I | L | L | L | *1 | *1 | H | L | L | L | L | L | L | L | H | L | L |
| MODE 4 | IC402 ⑲ | I | L | H | H | *1 | *1 | L | H | H | L | L | L | L | L | L | L | L |
| C IN REC PRF | IC402 ⑰ | I | L | *2 | *2 | *2 | *2 | *2 | *2 | *2 | *2 | *2 | *2 | *2 | *2 | *2 | *2 | *2 |
| T REEL FG | IC402 ㊹ | I | H/L | H/L | H/L | H/L | H/L | H/L | *3 | *3 | *3 | H/L | *3 | *3 | *3 | *3 | *3 | H/L |
| S REEL FG | IC402 ㊸ | I | H/L | H/L | H/L | *3 | *3 | H/L | *3 | *3 | *3 | H/L | *3 | *3 | *3 | *3 | *3 | H/L |
| T/S LED | IC402 ㉟ | O (O.D) | *4 | *4 | *4 | *4 | *4 | *4 | *4 | *4 | *4 | *4 | *4 | *4 | *4 | *4 | *4 | *4 |
| $\overline{\text{CAP STOP}}$ | IC402 ㉞ | O (O.D) | L | L | L | H | H | L | H | H | H | L | *5 | H | H | H | H | L |
| $\overline{\text{CAP RVS}}$ | IC402 ㉜ | O | L | | | H | L | H/L | H | L | H | H | H/*5 | H | H | L | H | H |
| T SENS | IC402 ㉛ | I | *4 | *4 | *4 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 |
| S SENS | IC402 ㉜ | I | *4 | *4 | *4 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 | *6 |

*1. Uncertainty.
*2. “L” when the erasing protection tab is bent, “H” when not bent.
*3. Pulse of period proportionate to reel rotation speed.
*4. Apporx. 2 msec. period “H” pulse.
*5. Pulse in tape running.
*6. Normally “L”. 2 msec. period “H” pulse when tape top or tape end is detected.
*7. “L” when unloading to switchover. “H” when loading. “HI-Z” when CAM motor is stop.



## 4-5. SYSTEM CONTROL-SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA10 BOARD IC402)

| Signal | Pin No. | I/O | Function |
|---|---|---|---|
| $\overline{\text{ASURA RESET}}$ | IC402 ㊵ | I | Normally "H"."L"when service interruption is detected or restored. |
| $\overline{\text{ASURA CS}}$ | IC402 ㊹ | I | Chip select signal from the timer microprocessor. V period “L” pulse. |
| S IN 0 | IC402 ㊺ | I | Serial communication data from the timer microprocessor. V period “L” pulse. |
| S OUT 0 | IC402 ㊻ | O | Serial communication data to the timer microprocessor. V period “L” pulse. |
| $\overline{\text{S CLK}}$ | IC402 ㊼ | I | Serial communication clock with the timer microprocessor. V period “L” pulse. |

## 4-6. SYSTEM CONTROL-AUDIO BLOCK INTERFACE (MA10 BOARD IC402)

| Sigmal | Pin No. | I/O | STOP | FF | REW | TAPE LOADING | TAPE UNLOADING | PB | PB · PAUSE | SLOW | X2 | PICTURE SEARCH CUE | PICTURE SEARCH REVIEW | REC | REC · PAUSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A MUTE | IC402 ㊾ | O (O.D) | L | L | L | L | L | *1 | H | H | H | H | H | L | L |

*1. 30Hz 50% duty pulse approximately 5 msec. delayed from RF SW P.

## 4-7. SERVO/SYSTEM CONTROL PORT FUNCTION DESCRIPTION (MA10 BOARD IC402)

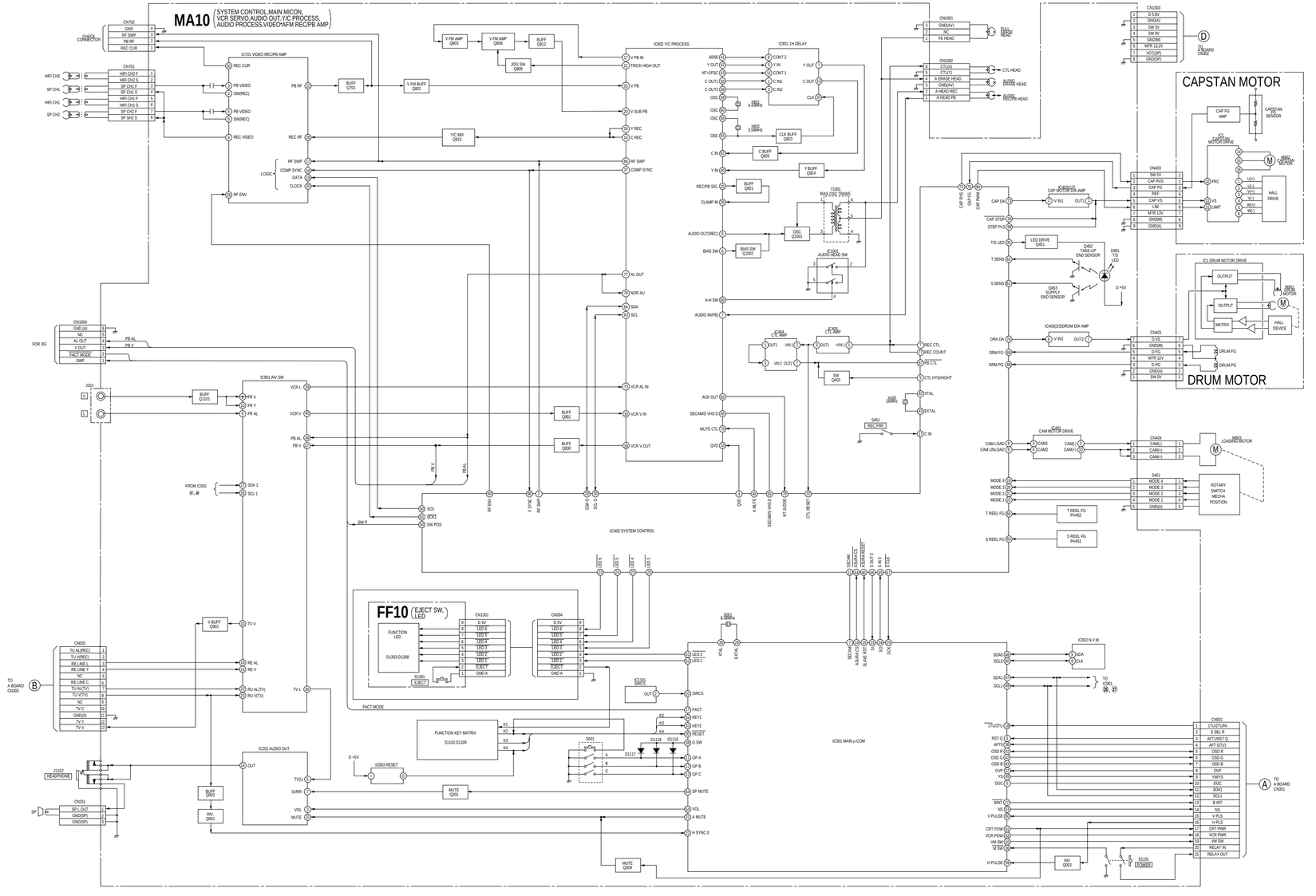
| Pin No. | Signal | I/O | Function |
|---|---|---|---|
| 1 | RF SWP | O | RF SWITCHING PULSE |
| 2 | – | – | |
| 3 | – | – | |
| 4 | QVD | O | QUASI VD |
| 5 | CTLHYS HIGH | O | CTL CONTROL |
| 6 | – | – | |
| 7 | REC CTL | O | REC CTL SIGNAL |
| 8 | CAM LOAD | O | CAM LOADING |
| 9 | CAM UNLOAD | O | CAM UNLOADING |
| 10 | CTL RESET | O | CTL CONTROL |
| 11 | – | – | |
| 12 | – | – | |
| 13 | – | – | |
| 14 | – | – | |
| 15 | – | – | |
| 16 | – | – | |
| 17 | C IN | I | CASSETTE IN |
| 18 | – | – | |
| 19 | MODE4 | I | MD MODE DET |
| 20 | MODE3 | I | MD MODE DET |
| 21 | MODE2 | I | MD MODE DET |
| 22 | MODE1 | I | MD MODE DET |
| 23 | LED6 | O | REC PON LED |
| 24 | LED5 | O | ON TIMER LED |
| 25 | LED4 | O | REC LED |
| 26 | LED3 | O | TIMER REC LED |
| 27 | – | – | |
| 28 | SDA | I/O | I²C BUS DATA FOR VIDEO/HiFi |
| 29 | – | – | |
| 30 | SCL | O | I²C BUS CLOCK FOR VIDEO/HiFi |
| 31 | – | – | |
| 32 | – | – | |
| 33 | GND | O | |
| 34 | CAP STOP | O | |
| 35 | T/S LED | O | T/S LED CONTROL |
| 36 | GND | O | |
| 37 | GND | O | |
| 38 | GND | O | |
| 39 | MP | – | |
| 40 | ASURA RESET | – | |
| 41 | Vss | – | |
| 42 | XTAL | – | |
| 43 | EXTAL | – | |
| 44 | ASURA CS | I | ASURA u-COM CHIP SELECT |
| 45 | S IN 0 | I | SERIAL DATA IN |
| 46 | S OUT 0 | O | SERIAL DATA OUT |
| 47 | S CLK | I | SERIAL CLOCK |
| 48 | GND | O | |
| 49 | MUTE | O | AUDIO MUTE |
| 50 | POS | I | SWITCHING POSITION ADJ MODE |

| Pin No. | Signal | I/O | Function |
|---|---|---|---|
| 51 | GND | O | |
| 52 | AVss | – | |
| 53 | AV ref | – | |
| 54 | AVdd | – | |
| 55 | SECAM/SVHS | I | SVHS DET IN |
| 56 | GND | O | |
| 57 | DEW | I | DEW SENSOR |
| 58 | GND | O | |
| 59 | – | – | |
| 60 | RF ENV | I | VIDEO RF ENVELOPE DET |
| 61 | T SENS | I | TAPE TOP SENSOR |
| 62 | S SENS | I | TAPE END SENSOR |
| 63 | SREEL FG | I | S-REEL FG |
| 64 | TREEL FG | I | T-REEL FG |
| 65 | GND | O | |
| 66 | VSYNC | I | V SYNC SIGNAL IN |
| 67 | PB CTL | I | PB CTL SIGNAL |
| 68 | DRM PG | I | DRUM PG |
| 69 | DRM FG | I | DRUM FG |
| 70 | CAP FG | I | CAPSTAN FG |
| 71 | – | – | |
| 72 | CAP RVS | O | CAPSTAN REVERSE |
| 73 | CAP DA | O | CAPSTAN D/A OUTPUT |
| 74 | DRM DA | O | DRUM D/A OUTPUT |
| 75 | JOG | O | JOG CONTROL |
| 76 | S VHS | O | S VHS DET OUT |
| 77 | REC COUNT | I | REC CTL COUNT |
| 78 | – | – | |
| 79 | – | – | |
| 80 | SO 1 | O | SERIAL DATA OUTPUT FOR RP AMP |
| 81 | SCK1 | O | SERIAL CLOCK FOR RP AMP |
| 82 | GND | O | |
| 83 | V PB | O | VIDEO PB MODE |
| 84 | CAP PWM | O | CAPSTAN |
| 85 | – | – | |
| 86 | – | – | |
| 87 | – | – | |
| 88 | Vss | – | |
| 89 | Vdd | – | |
| 90 | – | – | |
| 91 | – | – | |
| 92 | – | – | |
| 93 | – | – | |
| 94 | – | – | |
| 95 | – | – | |
| 96 | – | – | |
| 97 | – | – | |
| 98 | – | – | |
| 99 | STEP PLS | O | |
| 100 | – | – | |

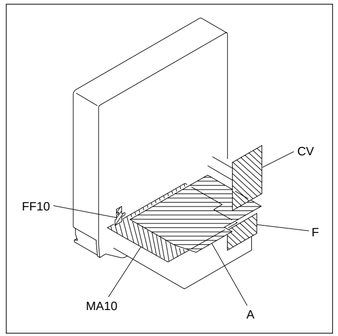
# SECTION 5
# DIAGRAMS

## 5-1. BLOCK DIAGRAMS

**VIDEO BLOCK**




## 5-2. CIRCUIT BOARDS LOCATION



**MA10 (1/3)** [SYSTEM CONTROL, MAIN MICON / VCR SERVO, AUDIO OUT]

**MA10 (2/3)** [Y/C PROCESS]

**MA10 (3/3)** [VIDEO REC/PB AMP]

## 5-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF
  Capacitors without voltage indication are all 50V.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power: 1/4W(CHIP:1/10W)

- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-chassis.

- Readings are taken with a color-bar signal input.
- Readings are taken with a 10MΩ digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
  no mark : REC/PB
  ( ) : REC
  < > : PB
- Circled numbers are waveform reference.
- : B + line
- : B – line.
- : signal path.

Reference information

| | | | | | |
|---|---|---|---|---|---|
| RESISTOR | : RN | METAL FILM | CAPACITOR | : TA | TANTALUM |
| | : RC | SOLID | | : PS | STYROL |
| | : FPRD | NONFRAMMABLE CARBON | | : PP | POLYPROPYLENE |
| | : FUSE | NONFRAMMABLE FUSIBLE | | : PT | MYLAR |
| | : RW | NONFRAMMABLE WIREWOUND | | : MPS | METALIZED POLYESTER |
| | : RS | NONFRAMMABLE METAL OXIDE | | : MPP | METALIZED POLYPROPYLENE |
| | : RB | NONFRAMMABLE CEMENT | | : ALB | BIPOLAR |
| | : ※ | ADJUSTMENT RESISTOR | | : ALT | HIGH TEMPERATURE |
| COIL | : LF-8L | MICRO INDUCTOR | | : ALR | HIGH RIPPLE |

### Terminal name of semiconductors in silk screen printed circuit (※)

| | Device | Printed symbol | Terminal name | Circuit |
|---|---|---|---|---|
| ① | Transistor | T | Collector / Base T Emitter | |
| ② | Transistor | — | Collector / Base Emitter | |
| ③ | Diode | | Cathode Anode | |
| ④ | Diode | T | Cathode / Anode T (NC) | |
| ⑤ | Diode | — | Cathode / Anode (NC) | |
| ⑥ | Diode | T | Common / Anode T Cathode | |
| ⑦ | Diode | — | Common / Anode Cathode | |

(Chip semiconductors that are not actually used are included.) Ver.1.6

(Chip semiconductors that are not actually used are included.) Ver.1.6

**Note: The components identified by shading and mark B are critical for safety. Replace only with part nummber specified.**



**MA10 BOARD**

**IC**

| | | |
|---|---|---|
| IC001 | B-6 | |
| IC002 | C-6 | |
| IC003 | B-6 | |
| IC201 | B-1 | |
| IC401 | A-4 | |
| IC402 | B-4 | |
| IC403 | B-3 | |
| IC404 | D-7 | |
| IC405 | D-7 | |
| IC701 | E-3 | |
| IC801 | E-5 | |
| IC802 | D-6 | |
| IC901 | C-2 | |
| IC1001 | E-6 | |
| IC1101 | A-7 | |

**TRANSISTOR**

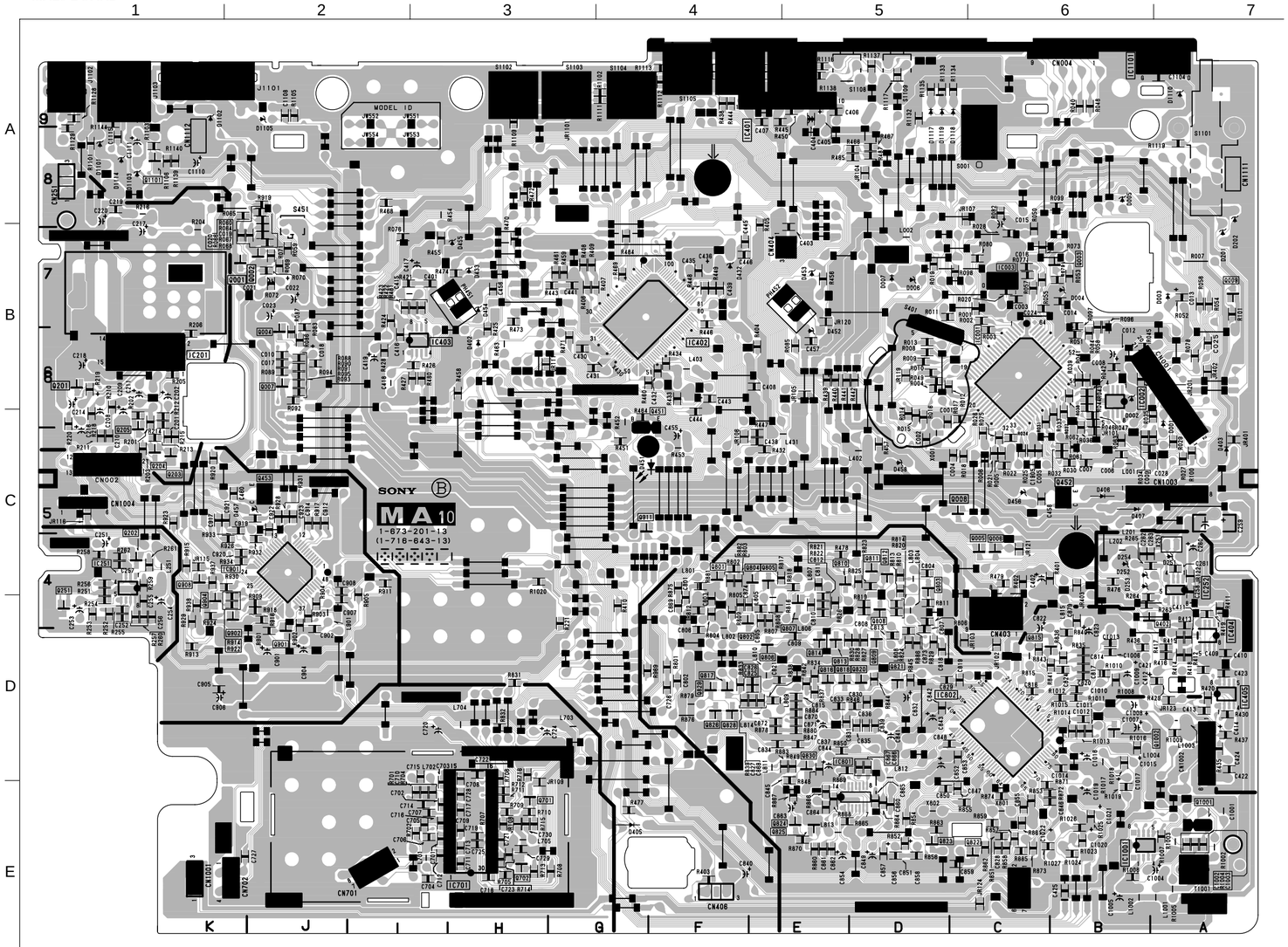
| | | | |
|---|---|---|---|
| | | | ※ |
| Q001 | B-2 | ① | |
| Q002 | B-2 | ① | |
| Q003 | B-6 | ① | |
| Q009 | B-7 | ① | |
| Q201 | B-1 | ① | |
| Q402 | D-7 | ① | |
| Q451 | C-4 | - | |
| Q452 | C-6 | - | |
| Q453 | C-2 | - | |
| Q701 | E-3 | ① | |
| Q801 | C-4 | ① | |
| Q803 | D-5 | ① | |
| Q808 | D-5 | ① | |
| Q809 | D-5 | ① | |
| Q812 | D-5 | ① | |
| Q815 | D-6 | ① | |
| Q821 | D-5 | ① | |
| Q823 | E-5 | ① | |
| Q824 | E-5 | ① | |
| Q825 | E-5 | ① | |
| Q830 | D-5 | ① | |
| Q901 | D-2 | ① | |
| Q902 | D-2 | ① | |
| Q1001 | E-7 | - | |
| Q1002 | D-6 | ① | |
| Q1101 | A-1 | ① | |

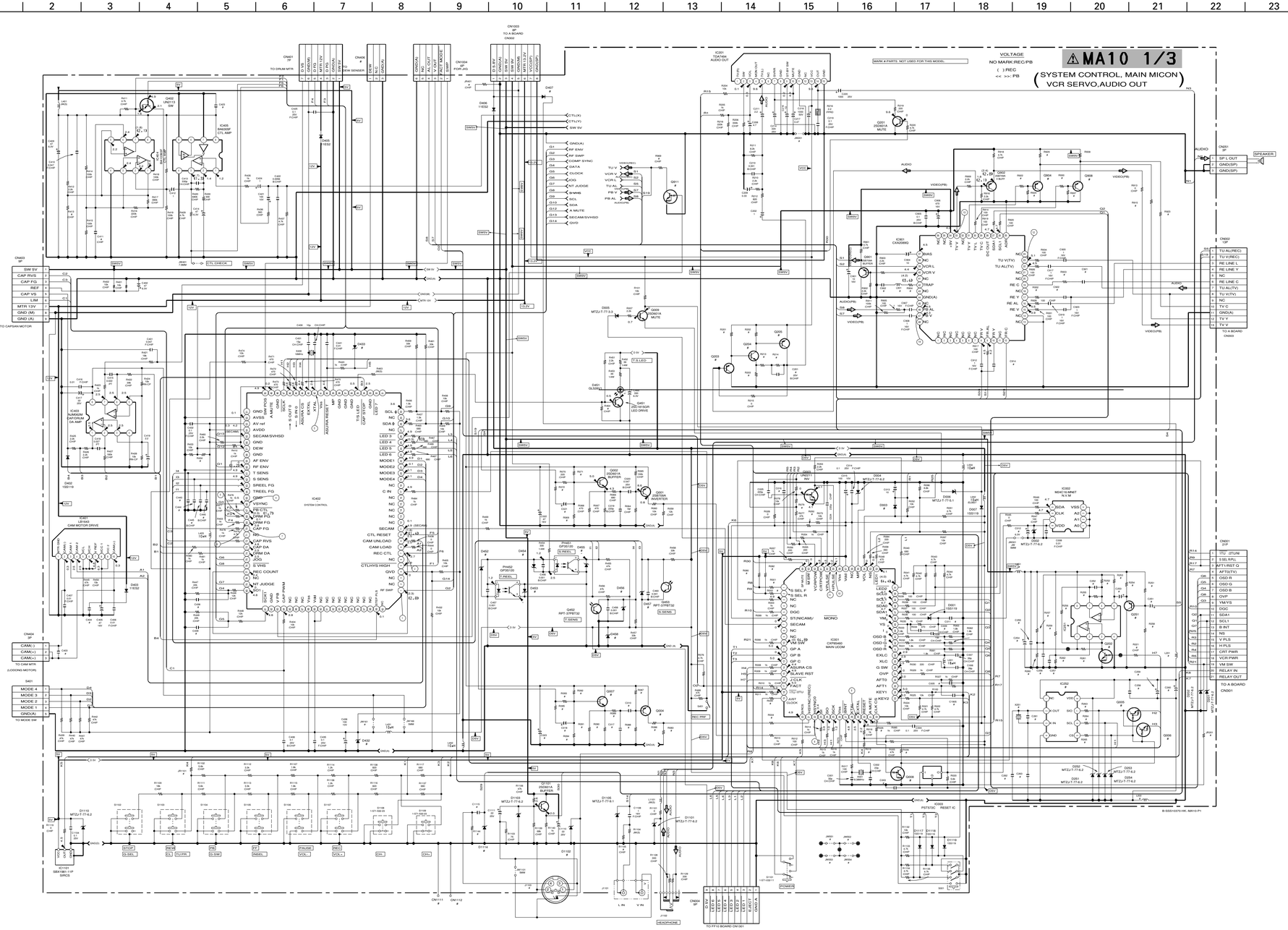
**DIODE**

| | | |
|---|---|---|
| | | ※ |
| D001 | C-7 | |
| D002 | C-7 | |
| D004 | B-6 | |
| D005 | A-6 | |
| D006 | B-5 | |
| D007 | B-5 | |
| D201 | B-7 | |
| D202 | B-7 | |
| D251 | C-7 | |
| D252 | D-7 | |
| D253 | D-7 | |
| D254 | C-6 | |
| D402 | B-3 | |
| D403 | C-7 | |
| D405 | E-4 | |
| D406 | C-6 | |
| D451 | C-4 | |
| D1101 | A-1 | |
| D1103 | A-1 | |
| D1105 | A-2 | |
| D1110 | A-7 | |
| D1117 | A-5 | |
| D1118 | A-5 | |
| D1119 | A-5 | |



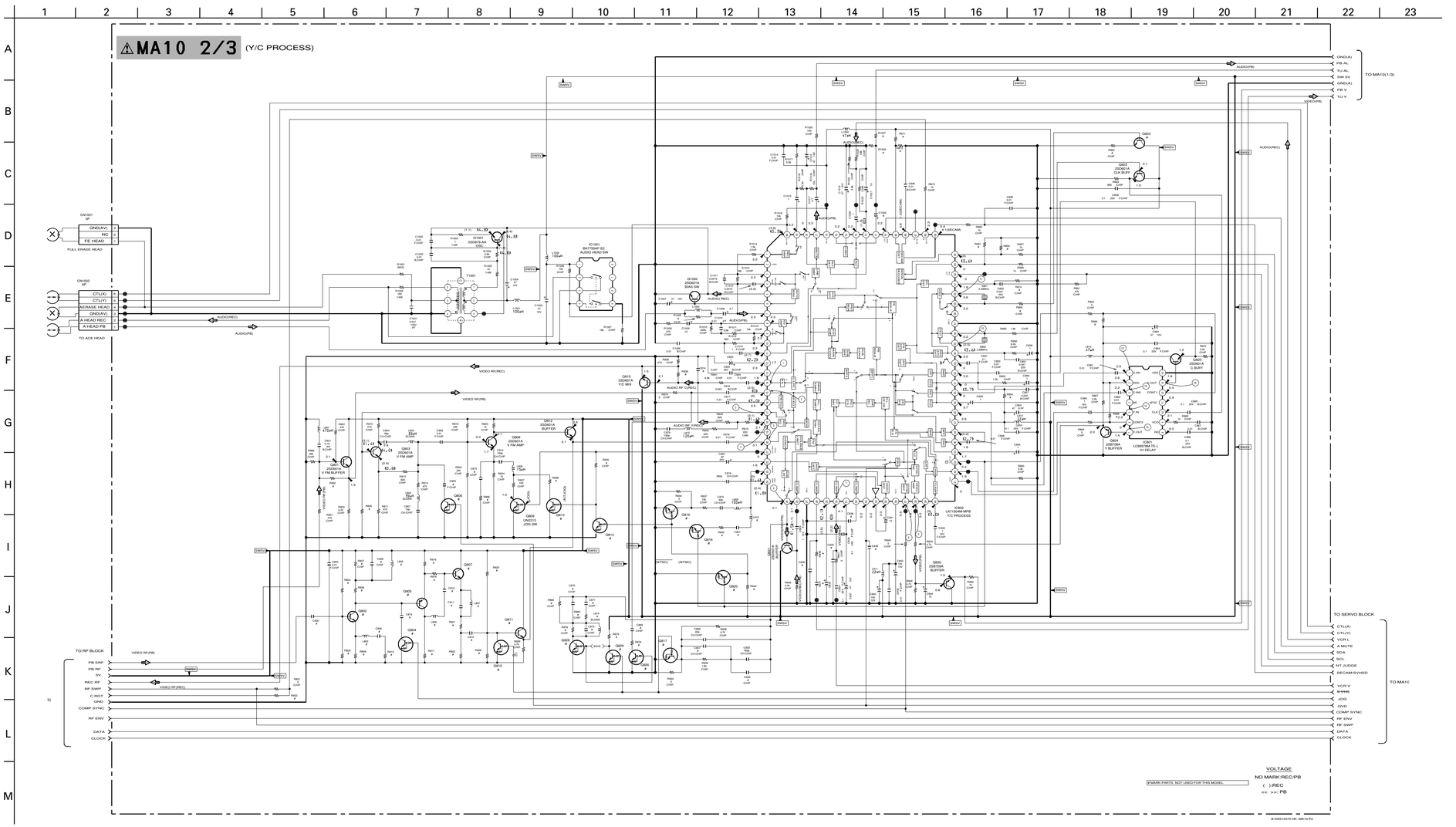
– MA10 BOARD –

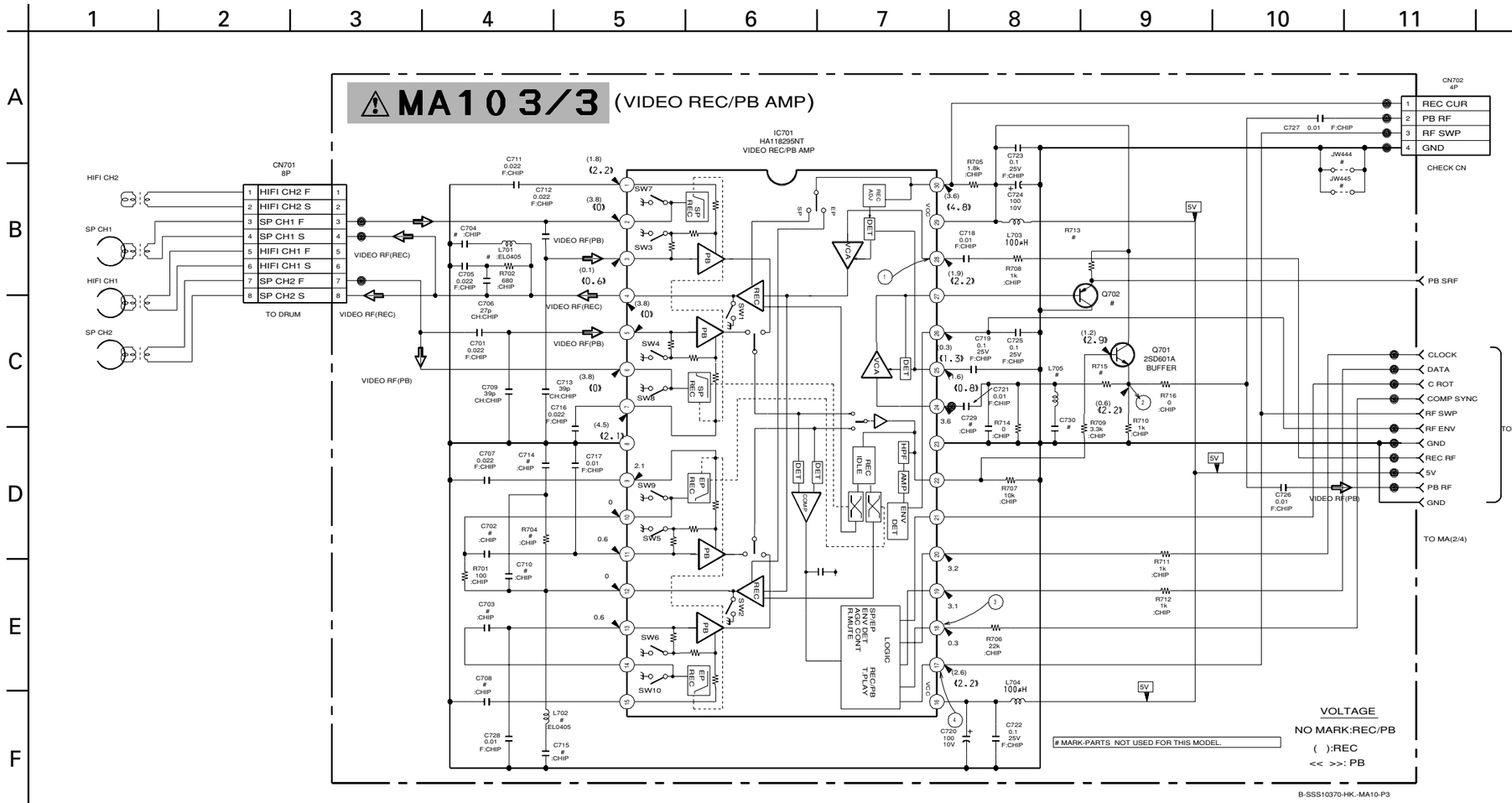



⚠MA10 1/3
SYSTEM CONTROL, MAIN MICON
VCR SERVO,AUDIO OUT
VOLTAGE
NO MARK:REC/PB
( ):REC
<< >>:PB
MARK ⊕ PARTS: NOT USED FOR THIS MODEL
IC001 CXP85460 MAIN UCOM
IC402 SYSTEM CONTROL
IC201 TDA7056A AUDIO OUT
IC301 CXA2069Q
IC302 M24C16-MWT N1W
IC252
IC253 PST9750C RESET IC
IC101 S80-5960-C-SF SPR25
IC405 BA6209F CTL AMP
IC403 NJM2067M CAT.CR/LM DA AMP
IC404 CAT.CR/LM DA AMP
IC501 SENSE CAM MOTOR DRIVE
IC401 CAM MOTOR DRIVE
IC402 SYSTEM CONTROL
IC001 CXP85460 MAIN UCOM
IC201 TDA7056A AUDIO OUT
IC301 CXA2069Q
IC302 M24C16-MWT N1W
IC252
IC253 PST9750C RESET IC
IC101 S80-5960-C-SF SPR25
IC405 BA6209F CTL AMP
IC403 NJM2067M CAT.CR/LM DA AMP
IC404 CAT.CR/LM DA AMP
IC501 SENSE CAM MOTOR DRIVE
IC401 CAM MOTOR DRIVE
CN402 8P TO A BOARD CN302
CN1023 8P TO A BOARD CN302
CN401 12P TO DRUM MTR
CN1024 8P FOR JIG
CN403 8P TO CAPSAN MOTOR
CN404 4P TO CAM MTR (LOADING MOTOR)
CN405 3P TO DRUM SENSER
CN406 3P
CN407 3P
CN408 3P
CN409 3P
CN410 3P
CN411 3P
CN412 3P
CN413 3P
CN414 3P
CN415 3P
CN416 3P
CN417 3P
CN418 3P
CN419 3P
CN420 3P
CN421 3P
CN422 3P
CN423 3P
CN424 3P
CN425 3P

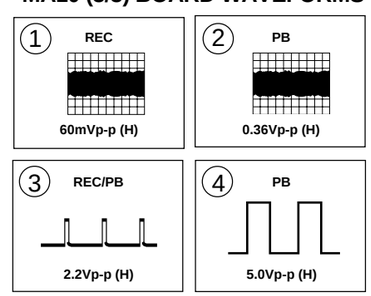
## MA10(2/3) BOARD WAVEFORMS

| | | |
|---|---|---|
| ① REC<br>PAL/SECAM<br>0.4Vp-p (H) | ① REC<br>NTSC<br>0.4Vp-p (H) | ② PB<br>0.32Vp-p (H) |
| ③ PB<br>0.32Vp-p (H) | ④ REC<br>0.24p-p (H) | ⑤ PB<br>0.25Vp-p (H) |
| ⑥ REC/PB<br>PAL/SECAM<br>0.5Vp-p (H) | ⑥ REC/PB<br>NTSC<br>0.5Vp-p (H) | ⑦ REC<br>PAL<br>1.2Vp-p(H) |
| ⑦ REC<br>SECAM<br>1.2Vp-p (H) | ⑦ REC<br>NTSC<br>1.8Vp-p (V) | ⑧ REC/PB<br>3.8Vp-p (H) |
| ⑨ REC/PB<br>PAL<br>2.4Vp-p (H) | ⑨ REC/PB<br>SECAM<br>2.4Vp-p (H) | ⑨ REC<br>NTSC<br>2.4Vp-p (H) |
| ⑨ PB<br>NTSC<br>2.0Vp-p (H) | ⑩ REC/PB<br>0.58Vp-p (3.58MHz) | ⑪ REC/PB<br>0.54Vp-p (4.43MHz) |
| ⑫ PAL<br>REC:0.4Vp-p(H)<br>PB:0.3Vp-p(H) | ⑫ SECAM<br>REC:0.2Vp-p(H)<br>PB:0.4Vp-p (H) | ⑫ NTSC<br>REC:0.5Vp-p(H)<br>PB:0.2Vp-p (H) |
| ⑬ PAL/SECAM<br>REC:0.4Vp-p(H)<br>PB:0.3Vp-p (H) | ⑬ NTSC<br>REC:0.5Vp-p(H)<br>PB:0.2Vp-p (H) | ⑭ REC/PB<br>PAL/SECAM<br>0.4Vp-p(H) |
| ⑭ REC/PB<br>NTSC<br>0.4Vp-p (H) | ⑮ REC/PB<br>PAL/SECAM<br>0.4Vp-p (H) | ⑮ REC/PB<br>NTSC<br>0.4Vp-p (H) |
| ⑯ PAL<br>REC:0.46Vp-p(H)<br>PB:0.3Vp-p (H) | ⑯ SECAM<br>REC:0.14Vp-p(H)<br>PB:0.3Vp-p (H) | ⑯ NTSC<br>REC:0.5Vp-p(H)<br>PB:0.2Vp-p (H) |



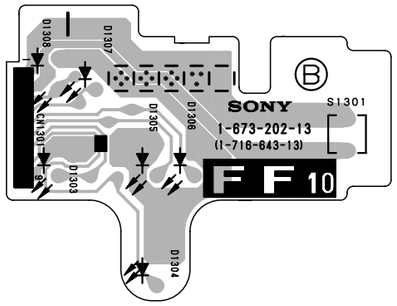


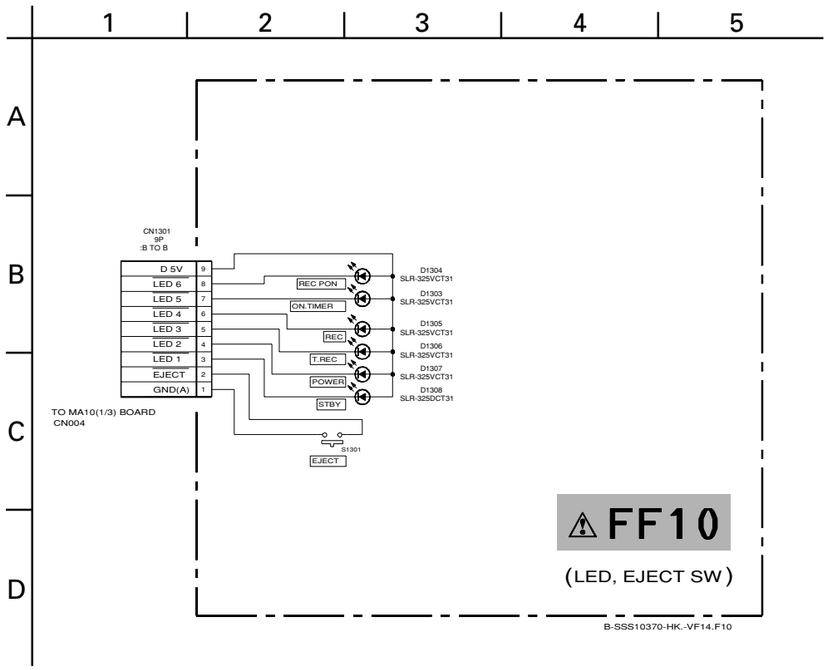

## • MA10 (3/3) BOARD WAVEFORMS



# FF10 [LED, EJECT SW]

– FF10 BOARD –



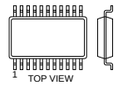

Schematic diagram
⬅ MA10 (3/3) board



## 5-4.SEMICONDUCTORS

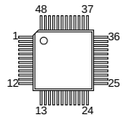
**IC**

**BA10393F-E2**
**BA6305F-E2**
**BA7755AF-E2**
**M24C16-MN6T**
**NJM062M**

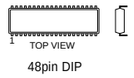



8pin SOP

**CXA2089Q**

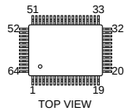



**CXA2130S**

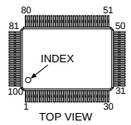



48pin DIP

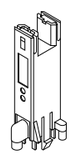
**CXP85460**




**CXP87852**



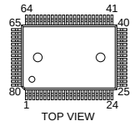

**GP3S120**



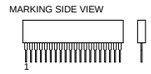
**HA118295NT**

30pin DIP

**LA71504M-MPB**

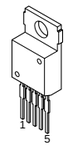



**LA7840L**

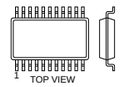



7pin SIP

**LB1643**




**LC89978M-TE-L**

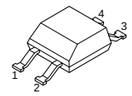



16pin SOP

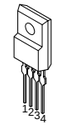
**LM393N**
**M5216P**

8pin DIP

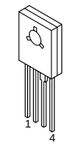
**PC123F2**
**PC123FY2**



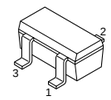

**PQ05RD11**
**-PQ09RD11**



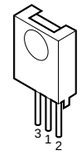

**PQ30RV11**



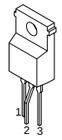

**PST572C**



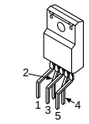

**SBX1981**



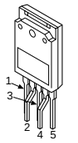

**SE-135N**



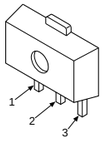

**SI-3120C**
**SI-3120CA**



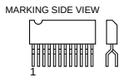

**STR-F6656**




**S-80743AL-A7**

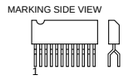



**TDA6101Q/N3**



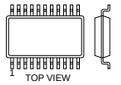

9pin ZIP

**TDA7494**



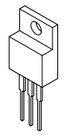

15pin ZIP

**TK11819MTL**




6pin SOP

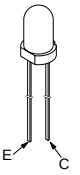
**µPC2406AHF**



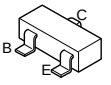
Schematic diagram
FF10 board ➡

## TRANSISTOR

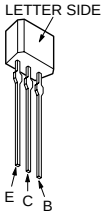
**RPT-37PBT32**
**RPT-37PB3F**



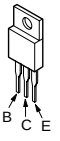

**UN2113**
**UN2211**
**UN2213**
**2SA1162-G**
**2SB709A-QRS-TX**
**2SC1623-L5L6**
**2SC2412K-T-146-QR**
**2SD601A-Q**
**2SD601A-QRS-TX**



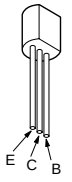

**2SA1175-HFE**
**2SA1309A-QRSTA**
**2SC2785-HFE**
**2SC3311A-QRSTA**



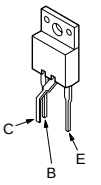

**2SA1837**
**2SC4793**



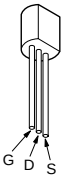

**2SC1815-GR**
**2SD879**



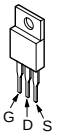

**2SC5388**



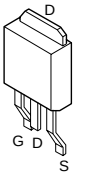

**2SK1482-T**




**2SK2251-01**

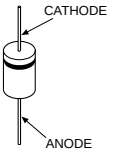



**2SK2845-LB102**

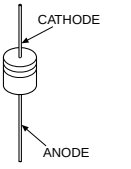



## DIODE

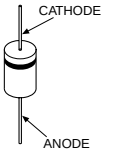
**D1NL20U**



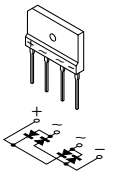

**D1NS4**
**D1N20R**
**MTZJ-T-77-3.9B**
**MTZJ-3.3**
**MTZJ-5.1C**
**MTZJ-6.2B**
**RD10ESB2**
**RD18ES-B2**
**RD3.9ES-B1**
**RD3.9ES-B2**
**RD39ES-B2**
**RD5.1ES-B1**
**RD5.6ESB2**
**RD6.8ES-B2**
**1SS119-25**
**11ES2**



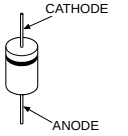

**D1NS4-TR**
**D1NS6-TA2**
**D2L20U**
**EL1Z**
**EGP20G**
**EGP30DL-6085**
**ERA22-08**
**GP08D**
**GP08DPKG23**
**HSS83TD**
**MTZJ-T-77-10**
**MTZJ-T-77-18B**
**MTZJ-T-77-3.3**
**MTZJ-T-77-3.9A**
**MTZJ-T-77-39**
**MTZJ-T-77-5.1**
**MTZJ-T-77-5.1C**
**MTZJ-T-77-5.6**
**MTZJ-T-77-6.2**
**MTZJ-T-77-6.8A**
**MTZJ-T-77-9.1**
**MTZJ-T-77-9.1A**
**RGP10GPKG23**
**RGP15GPKG23**



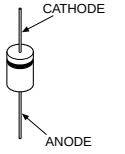

**D6SB60LF**



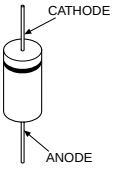
**EGP30D**



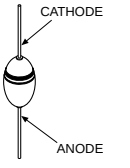

**ERC04-06S**
**ERC06-15S**
**RU-1P**



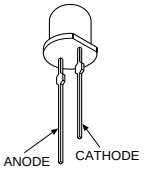

**RU-4AM-T3**



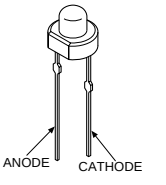

**U05G**




**GL528V1**




**SLR-325DCT31**
**SLR-325VCT31**



# SECTION 6
# EXPLODED VIEWS

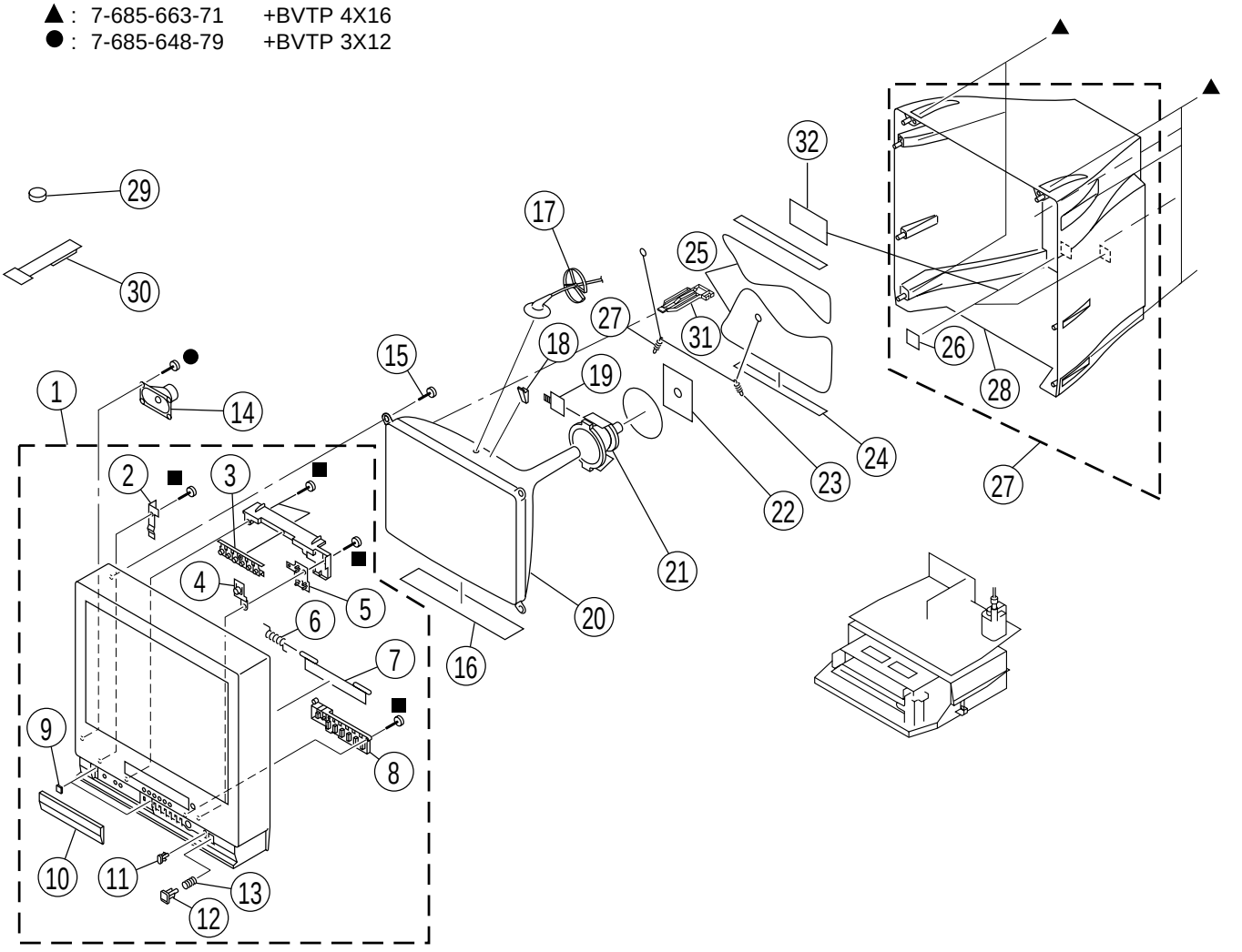
The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

**NOTE:**

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

## 6-1. PICTURE TUBE

■ : 7-685-134-19 +PTP 2.6X8
▲ : 7-685-663-71 +BVTP 4X16
● : 7-685-648-79 +BVTP 3X12



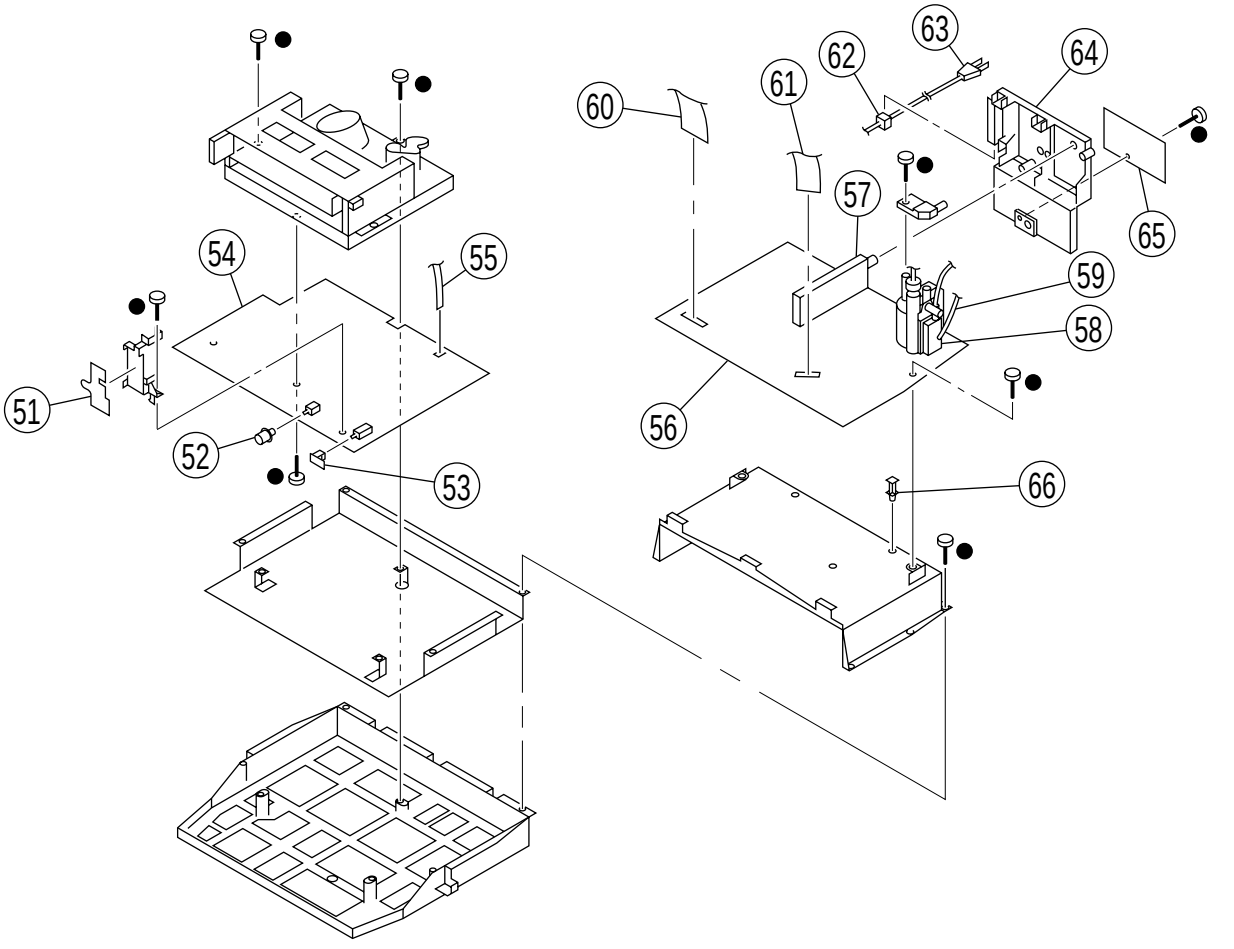

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| 1 | X-4037-425-1 | BEZNET ASSY (KV-VF14M77) | 2-13 |
| 1 | X-4037-428-1 | BEZNET ASSY (Except KV-VF14M77) | 2-13 |
| 2 | 4-070-691-01 | SPRING(A), DOOR | |
| 3 | 4-066-493-11 | BUTTON (A), FUNCTION | |
| 4 | 4-066-626-11 | BUTTON, EJECT | |
| 5 | 4-066-495-11 | GUIDE, LIGHT | |
| 6 | 3-953-432-01 | SPRING (GE), FL | |
| 7 | 4-069-445-01 | DOOR, CASSETTE (KV-VF14M77 only) | |
| | 4-069-445-11 | DOOR, CASSETTE (Except KV-VF14M77) | |
| 8 | 4-066-494-11 | BUTTON (B), FUNCTION | |
| 9 | 4-068-502-11 | CUSHION, DOOR | |
| 10 | X-4037-426-1 | DOOR ASSY | |
| 11 | 4-066-496-11 | FILTER, REMOTE | |
| 12 | 4-066-497-11 | BUTTON, POWER | |
| 13 | 4-042-593-21 | SPRING, COMPRESSION | |
| 14 | 1-529-474-11 | SPEAKER (5CM) | |
| 15 | 4-365-808-01 | SCREW (5), TAPPING | |

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| 16 | 4-070-789-01 | SHEET, BLOTTING | |
| 17 | * 3-704-372-11 | HOLDER, HV CABLE | |
| 18 | 3-704-495-01 | SPACER, DY | |
| 19 | 2-163-920-01 | PLATE, TLH CORRECTION | |
| 20 | ⚠ 8-735-570-05 | PICTURE TUBE (A34LRG70X) | |
| 21 | ⚠ 8-451-401-11 | DEFLECTION YOKE (Y14RSA-S) | |
| 22 | * A-1332-023-A | CV MOUNT | |
| 23 | 4-369-318-61 | SPRING, TENSION | |
| 24 | 4-069-978-01 | CUSHION, DGC | |
| 25 | ⚠ 1-419-185-11 | COIL, DEGAUSSING | |
| 26 | 4-049-416-01 | SHEET, BLIND | |
| 27 | X-4037-427-1 | COVER ASSY, REAR | 26, 28, 32 |
| 28 | 4-070-688-01 | COVER (14), REAR | |
| 29 | 1-452-032-00 | MAGNET,DISK | |
| 30 | 4-051-736-21 | PIECE A(90), CONV. CORRECT | |
| 31 | 4-069-972-01 | CLIP (14 RSN), DGC | |
| 32 | 4-074-019-01 | SHEET (A) BLIND | |

## 6-2. CHASSIS

● : 7-685-648-79 +BVTP 3X12

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

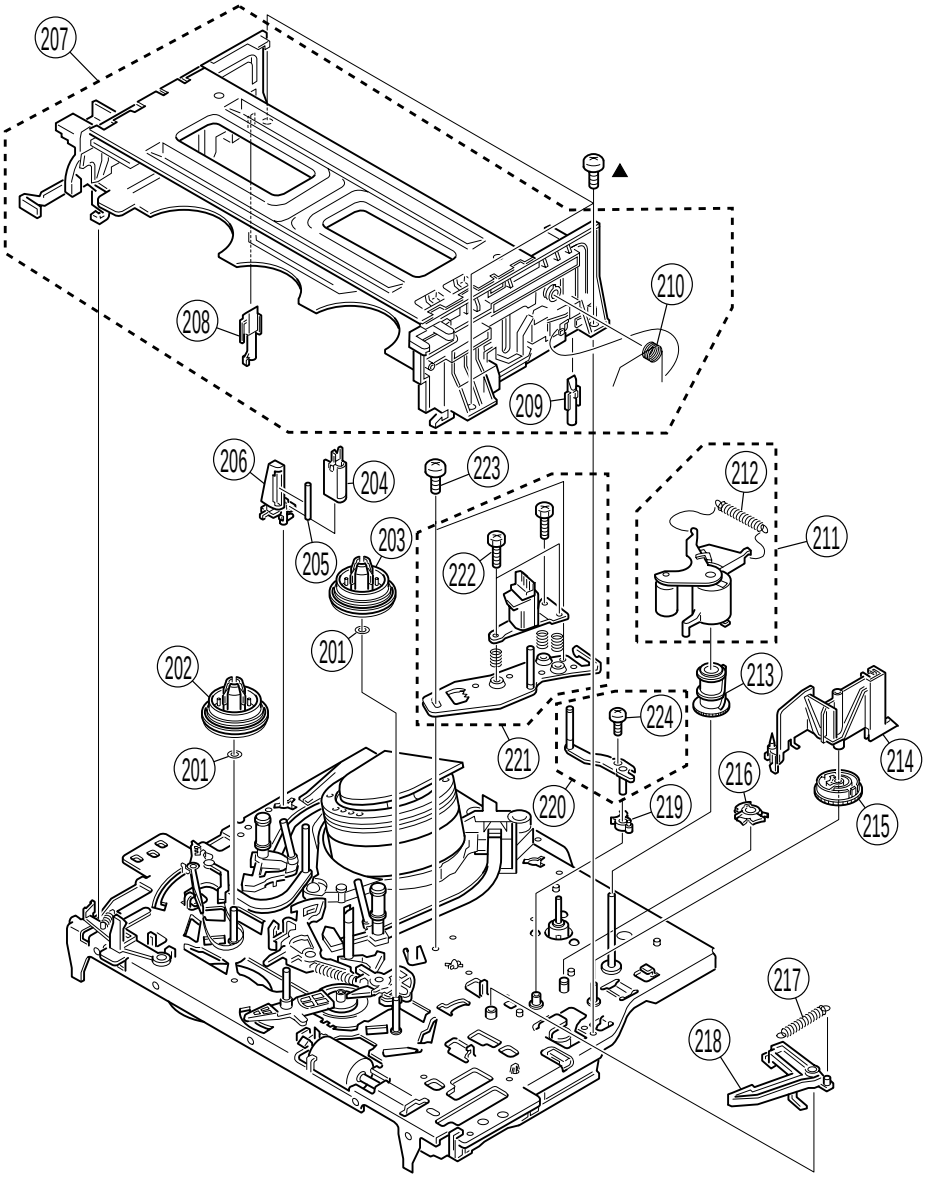



| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| 51 | * A-1241-368-A | FF10 MOUNT | |
| 52 | 4-066-498-11 | BUTTON, RECORDING | |
| 53 | 4-394-972-01 | CAP, POWER | |
| 54 | * A-1306-587-A | MA10 COMPL | |
| 55 | 1-900-234-88 | CONNECTOR ASSY 7P | |
| 56 | * A-1299-137-A | A COMPL(Except KV-VF14M77) | 57,58 |
| 56 | * A-1299-125-A | A COMPL (KV-VF14M77) | 57,58 |
| 57 | 8-598-449-10 | TUNER, FSS BTF-LG443 (VF14M40/M70) | |
| 57 | 8-598-451-30 | TUNER, FSS BTF-WG441 (VF14M77) | |
| 58 | ⚠ 1-453-309-11 | FBT ASSY (NX-4450//M3A4) | |

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| 59 | 1-900-246-27 | LEAD ASSY, G2 | |
| 60 | 1-900-244-71 | CONNECTOR ASSY, FLAT 13P | |
| 61 | 1-900-244-04 | CONNECTOR ASSY , FLAT 21P | |
| 62 | 4-022-115-00 | HOLDER, AC CORD | |
| 63 | ⚠ 1-769-609-21 | CORD, POWER (WITH CONNECTOR) | |
| 64 | 4-069-720-01 | TERMINAL PLATE (GA) | |
| 65 | * A-1241-367-A | F MOUNT | |
| 66 | * 4-046-677-11 | HOLDER (B), PWB | |

## 6-3. MECHANISM DECK ASSEMBLY (1)

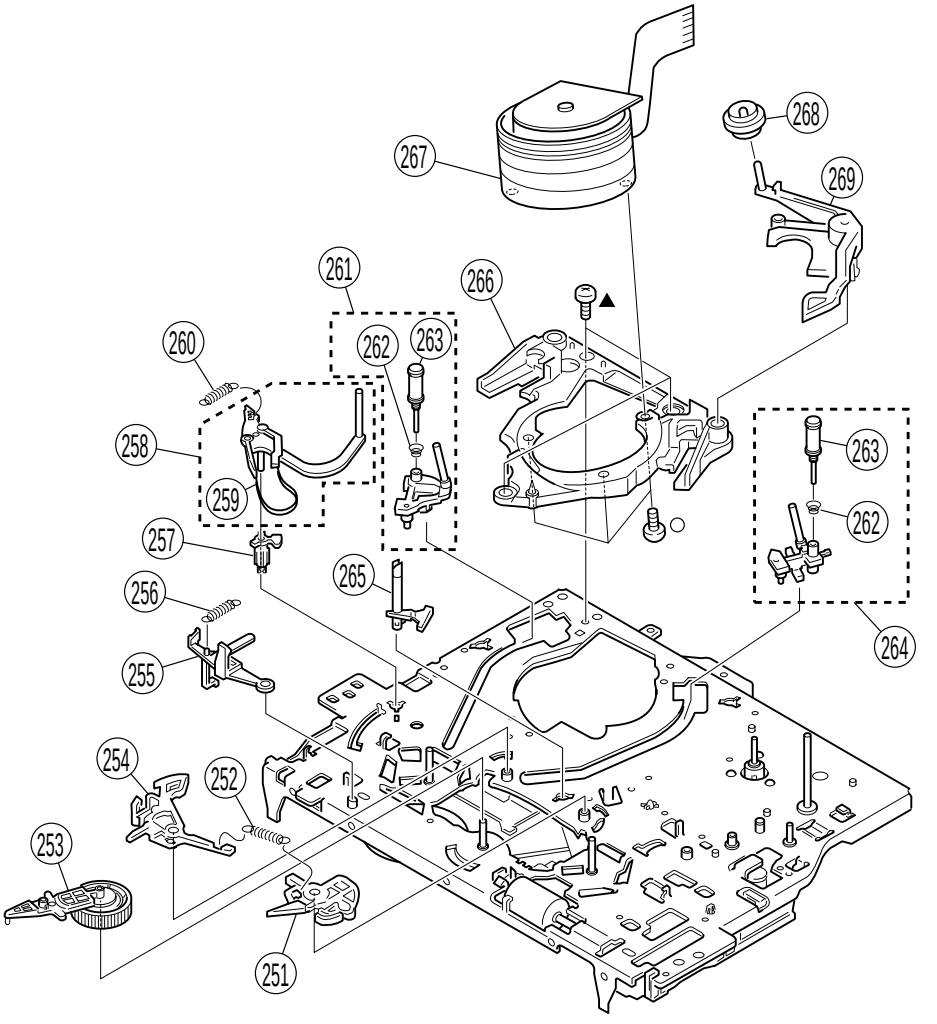
▲ : 7-685-646-79 +BVTP 3X8




| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| 201 | 3-977-509-01 | WASHER, THRUST | |
| 202 | 3-977-507-01 | TABLE, REEL (S) | |
| 203 | 3-977-508-01 | TABLE, REEL (T) | |
| 204 | 1-500-471-11 | HEAD, FE | |
| 205 | 3-977-495-01 | SHAFT TG2 | |
| 206 | 3-977-494-01 | HOLDER, FEH | |
| 207 | A-6759-619-B | FL COMPLETE ASSY | 208-210 |
| 208 | 3-977-535-01 | PLATE, LUMINOUS(END SENSOR) | |
| 209 | 3-977-536-01 | PLATE, LUMINOUS(TOP SENSOR) | |
| 210 | 3-970-471-01 | SPRING (DECK OPEN), TORSION | |
| 211 | A-6759-615-A | PRESS BLOCK ASSY, PINCH | 212 |
| 212 | 3-958-455-01 | SPRING (PINCH), TENSION | |
| 213 | 3-977-447-01 | GEAR, ELEVATOR | |
| 214 | 3-977-514-01 | OPENER, LID | |
| 215 | 3-977-441-01 | GEAR, PINCH PRESSING | |
| 216 | 3-977-445-01 | GEAR, TG8 ARM DRIVING | |
| 217 | 3-977-465-01 | SPRING,EXTENSION(RVS BRAKE) | |
| 218 | X-3947-582-1 | ARM ASSY, RVS BRAKE | |
| 219 | 3-977-446-01 | GEAR, TG8 ARM | |
| 220 | X-3947-590-1 | TG8 ASSY | 224 |
| 221 | A-6759-620-A | HEAD BLOCK ASSY, ACE (TDK) | 222 |
| 222 | 3-974-556-11 | + HEXA TT 2.6X9 (TAPER) | |
| 223 | 3-979-508-01 | SCREW +HEXA TP SW 3X8 | |
| 224 | 3-719-381-01 | SCREW (M2X4) | |

## 6-4. MECHANISM DECK ASSEMBLY (2)

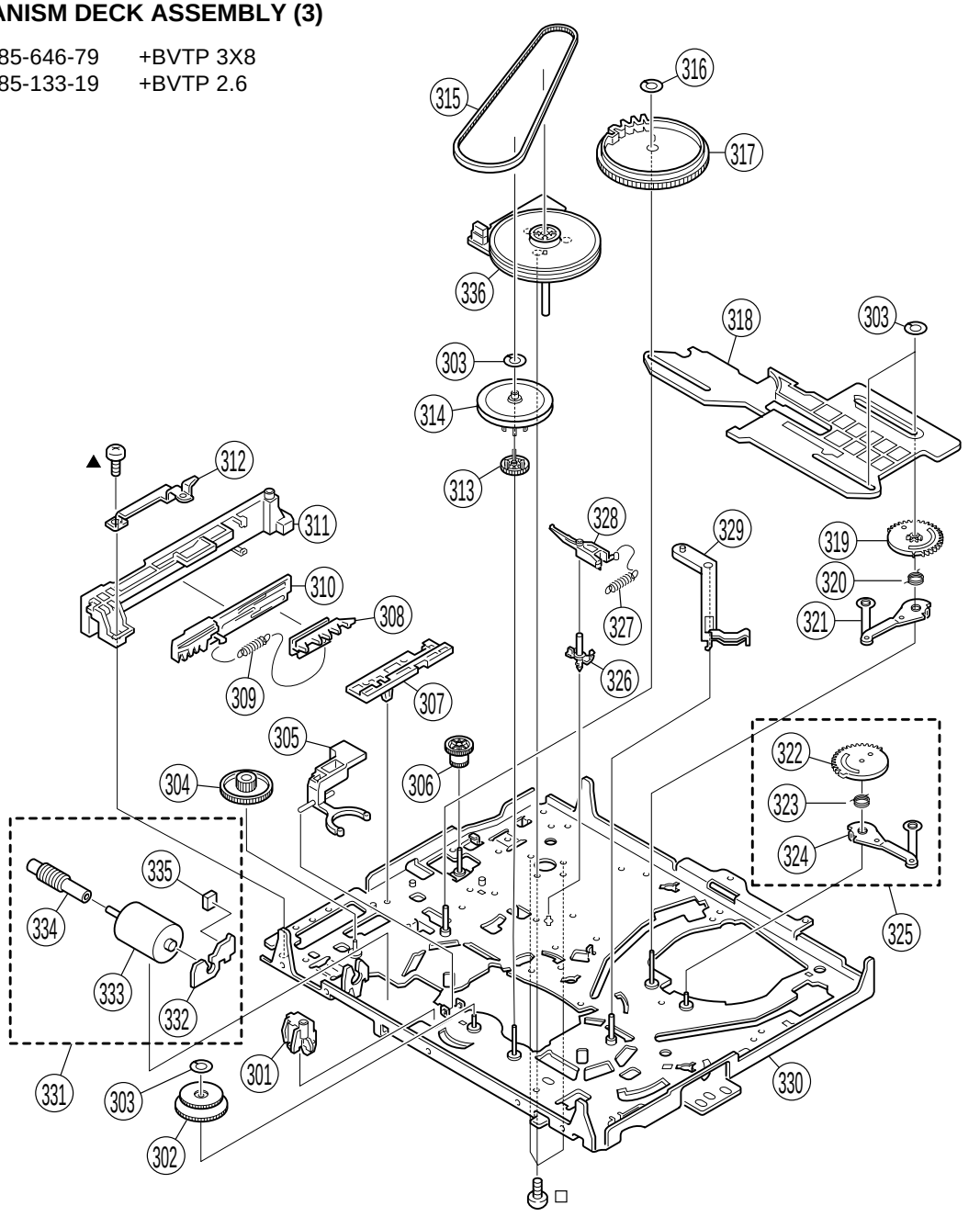
▲: 7-685-646-79 +BVTP 3X8
O: 7-682-547-04 +P 3X6




| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| 251 | X-3947-581-4 | BRAKE ASSY,MAIN(T) | |
| 252 | 3-977-462-01 | SPRING,EXTENTION. (MAIN BRAKE) | |
| 253 | X-3947-573-1 | ARM ASSY, PENDULUM | |
| 254 | X-3947-580-5 | BRAKE ASSY, MAIN(S) | |
| 255 | 3-977-513-02 | LEVER, REC. PROOF | |
| 256 | 3-976-767-01 | SPRING, TENS. (REC. PROOF) | |
| 257 | 3-977-487-01 | BOSS, TG1 FULCRUM | |
| 258 | X-3947-587-1 | TG1 ASSY | 259 |
| 259 | X-3947-589-1 | BAND ASSY, TG1 | |
| 260 | 3-977-488-01 | SPRING (POWER TENSION) | |
| 261 | A-6750-324-A | SHUTTLE (S) BLOCK ASSY | 262,263 |
| 262 | 3-965-178-01 | SPRING | |
| 263 | X-3944-378-1 | ROLLER ASSY, GUIDE | |
| 264 | A-6750-328-E | SHUTTLE (T) BLOCK ASSY | 262,263 |
| 265 | 3-977-501-01 | PLATE, LUMINOUS | |
| 266 | 3-969-632-04 | BASE, DRUM | |
| 267 | 1-759-453-11 | DRUM ASSY (DZH-89A-R) | |
| 268 | X-3947-255-1 | ROLLER ASSY, HC | |
| 269 | 3-975-724-07 | ARM, HC | |

## 6-5. MECHANISM DECK ASSEMBLY (3)

▲ : 7-685-646-79 +BVTP 3X8
□ : 7-685-133-19 +BVTP 2.6




| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| 301 | 3-977-437-01 | RETAINER,CAM MOTOR | |
| 302 | X-3947-584-1 | ASSY, REEL DIRECT | |
| 303 | 3-977-443-01 | WASHER, STOPPER | |
| 304 | 3-977-438-01 | WORM - WHEEL | |
| 305 | 3-977-506-01 | ARM, LIMITTER SELECTION | |
| 306 | 3-977-444-01 | GEAR, PINCH TRANSMISSION | |
| 307 | 3-977-515-01 | GUIDE, FL SLIDER | |
| 308 | 3-977-517-01 | PLATE, SLIDE, FL | |
| 309 | 3-977-519-01 | SPRING, TENS. (LIMIT, FL) | |
| 310 | 3-977-518-02 | PLATE, LIMITTER, FL | |
| 311 | 3-977-516-01 | HOLDER, FL SLIDER | |
| 312 | 3-977-877-01 | PLATE, RETAINER | |
| 313 | 3-977-504-01 | GEAR, CLUTCH | |
| 314 | X-3947-585-1 | GEAR ASSY, PULLEY | |
| 315 | 3-977-510-01 | BELT, RUBBER | |
| 316 | 3-977-440-01 | WASHER, STOPPER | |
| 317 | 3-977-439-01 | GEAR, CAM | |
| 318 | 3-977-442-01 | SLIDER | |

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| 319 | 3-977-455-01 | GEAR, LOADING(T) | |
| 320 | 3-977-456-03 | SPRING, TORSION (LOAD T) | |
| 321 | X-3947-579-1 | LEVER ASSY, LOADING(T) | |
| 322 | 3-977-451-01 | GEAR, LOADING(S) | |
| 323 | 3-977-452-01 | SPRING, TORSION (LOAD S) | |
| 324 | X-3947-578-1 | LEVER ASSY, LOADING(S) | |
| 325 | A-6759-616-A | GEAR BLOCK ASSY, LOADING(S) | 322-324 |
| 326 | 3-977-468-01 | SHAFT, CAPSTAN BRAKE | |
| 327 | 3-977-467-02 | SPRING, CAP BRAKE | |
| 328 | X-3947-583-1 | BRAKE ASSY, CAPSTAN | |
| 329 | 3-977-489-01 | ARM, TG1 DRIVING | |
| 330 | X-3947-576-2 | CHASSIS ASSY, MECHANICAL | |
| 331 | X-3947-577-1 | MOTOR ASSY, CAM | 332-335 |
| 332 | 1-666-524-11 | PWB, CA-55 | |
| 333 | 1-541-309-11 | MOTOR, L (RF-370C) | |
| 334 | 3-977-436-01 | WORM | |
| 335 | 1-766-723-21 | CONNECTOR, BOARD TO BOAR 3P | |
| 336 | 1-698-971-11 | MOTOR, DC | |

# SECTION 7
# ELECTRICAL PARTS LIST

**A**

**NOTE:**

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

- The components identified by ⋈ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

- CAPACITORS
  PF : μμ F
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

## TV BLOCK

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| | * A-1299-137-A | A BOARD COMPLETE (EXCEPT KV-VF14M77) | |
| | * A-1299-125-A | A BOARD COMPLETE (KV-VF14M77) | |
| | | ********** | |
| | 1-900-250-86 | LEAD ASSY, SHIELD | |
| | 4-070-692-01 | HOLDER (A), FBT | |
| | 4-352-844-01 | PIN, LEAD, COATING | |
| | 4-382-854-01 | SCREW (M3X8), P, SW (+) | |
| | 4-382-854-11 | SCREW (M3X10), P, SW (+) | |
| | 7-685-648-79 | SCREW +BVTP 3X12 TYPE2 IT-3 | |
| | | <CAPACITOR> | |
| C102 | 1-126-933-11 | ELECT\T100MF 20% 16V | |
| C104 | 1-126-933-11 | ELECT\T100MF 20% 16V | |
| C106 | 1-126-933-11 | ELECT\T100MF 20% 16V | |
| C108 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C110 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C111 | 1-124-234-00 | ELECT\T22MF 20% 16V | |
| C113 | 1-126-964-11 | ELECT\T10MF 20% 50V | |
| C114 | 1-124-234-00 | ELECT\T22MF 20% 16V | |
| C117 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C118 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | 25V |
| C119 | 1-126-964-11 | ELECT\T10MF 20% 50V | |
| C301 | 1-126-963-11 | ELECT\T4.7MF 20% 50V | |
| C302 | 1-163-233-11 | CERAMIC CHIP\T18PF 5% | 50V |
| C304 | 1-163-233-11 | CERAMIC CHIP\T18PF 5% | 50V |
| C306 | 1-163-259-91 | CERAMIC CHIP\T220PF 5% | 50V |
| C307 | 1-126-957-11 | ELECT\T0.22MF 20% 50V | |
| C308 | 1-107-823-11 | CERAMIC CHIP\T0.47MF 10% | 16V |
| C309 | 1-126-162-11 | ELECT\T3.3MF 20% 50V | |
| C310 | 1-126-964-11 | ELECT\T10MF 20% 50V | |
| C311 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C312 | 1-126-963-11 | ELECT\T4.7MF 20% 50V | |
| C313 | 1-115-339-11 | CERAMIC CHIP\T0.1MF 10% | 50V |
| C314 | 1-107-714-11 | ELECT\T10MF 20% 16V | |
| C315 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C316 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C317 | 1-126-964-11 | ELECT\T10MF 20% 50V | |
| C318 | 1-104-665-11 | ELECT\T100MF 20% 25V | |
| C319 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | 25V |
| C320 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | 50V |
| C321 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | 25V |
| C322 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | 50V |
| C323 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | 50V |
| C325 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C326 | 1-126-960-11 | ELECT\T1MF 20% 50V | |
| C327 | 1-163-017-00 | CERAMIC CHIP\T0.0047MF 10% | 50V |
| C330 | 1-104-665-11 | ELECT\T100MF 20% 25V | |
| C331 | 1-102-114-00 | CERAMIC\T470PF 10% 50V | |
| C334 | 1-126-965-11 | ELECT\T22MF 20% 50V | |
| C335 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | 25V |
| C336 | 1-163-251-11 | CERAMIC CHIP\T100PF 5% | 50V |
| C337 | 1-163-017-00 | CERAMIC CHIP\T0.0047MF 10% | 50V |
| C338 | 1-104-665-11 | ELECT\T100MF 20% 25V | |
| C339 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | 25V |
| C501 | 1-126-934-11 | ELECT\T220MF 20% 16V | |
| C502 | 1-126-960-11 | ELECT\T1MF 20% 50V | |
| C503 | 1-163-021-91 | CERAMIC CHIP\T0.01MF 10% | 50V |
| C504 | 1-107-910-11 | ELECT\T100MF 20% 50V | |
| C505 | 1-115-339-11 | CERAMIC CHIP\T0.1MF 10% | 50V |
| C507 | 1-107-910-11 | ELECT\T100MF 20% 50V | |
| C508 | 1-106-220-00 | MYLAR\T0.1MF 10% | 100V |
| C509 | 1-137-194-81 | MYLAR\T0.47MF 5% 50V | |
| C510 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | 50V |
| C513 | 1-126-941-11 | ELECT\T470MF 20% 25V | |
| C514 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | 50V |
| C515 | 1-107-652-11 | ELECT\T10MF 20% 250V | |
| C601 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C602 | ⚠ 1-113-903-11 | CERAMIC\T0.001MF 20% | 250V |
| C603 | 1-113-903-11 | CERAMIC\T0.001MF 20% | 250V |
| C604 | 1-113-903-11 | CERAMIC\T0.001MF 20% | 250V |
| C605 | 1-125-906-11 | ELECT\T560MF 20% 450V | |
| C606 | 1-104-760-11 | CERAMIC CHIP\T0.047MF 10% | 50V |
| C607 | ⚠ 1-113-903-11 | CERAMIC\T0.001MF 20% | 250V |
| C608 | 1-126-942-61 | ELECT\T1000MF 20% 25V | |
| C609 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C610 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C611 | 1-104-331-11 | CERAMIC\T0.0022MF 10% | 1KV |
| C612 | 1-126-943-11 | ELECT\T2200MF 20% 25V | |
| ⋈C614 | ⚠ 1-126-964-11 | ELECT\T10MF 20% 50V | |
| C615 | 1-126-960-11 | ELECT\T1MF 20% 50V | |
| C616 | 1-107-680-91 | ELECT\T22MF 20% 450V | |
| C617 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C618 | 1-163-007-11 | CERAMIC CHIP\T680PF 10% | 50V |
| C619 | 1-162-318-11 | CERAMIC\T0.001MF 10% | 500V |
| C620 | 1-126-941-11 | ELECT\T470MF 20% 25V | |
| C621 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C622 | 1-104-664-11 | ELECT\T47MF 20% 25V | |
| C623 | 1-126-969-11 | ELECT\T220MF 20% 50V | |
| C624 | 1-162-318-11 | CERAMIC\T0.001MF 10% | 500V |

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

# A

| REF. NO. | | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|---|
| C625 | | 1-126-972-11 | ELECT\T1000MF | 20% | 50V | |
| C626 | | 1-126-944-21 | ELECT\T3300MF | 20% | 25V | |
| C627 | | 1-162-318-11 | CERAMIC\T0.001MF | 10% | 500V | |
| C628 | | 1-163-133-00 | CERAMIC CHIP\T470PF | 5% | 50V | |
| C630 | | 1-164-144-11 | CERAMIC\T0.0015MF | 10% | 1KV | |
| C631 | | 1-163-275-11 | CERAMIC CHIP\T0.001MF | 5% | 50V | |
| C632 | | 1-124-347-51 | ELECT\T100MF | 20% | 160V | |
| C634 | | 1-163-009-11 | CERAMIC CHIP\T0.001MF | 10% | 50V | |
| C635 | | 1-102-050-00 | CERAMIC\T0.01MF | 99% | 500V | |
| C636 | | 1-163-005-11 | CERAMIC CHIP\T470PF | 10% | 50V | |
| C638 | | 1-109-880-11 | FILM | 0.0015MF | 3% 2KV | |
| C639 | | 1-163-017-00 | CERAMIC CHIP\T0.0047MF | 10% | 50V | |
| C640 | | 1-163-001-11 | CERAMIC CHIP\T220PF | 10% | 50V | |
| C641 | | 1-102-114-00 | CERAMIC\T470PF | 10% | 50V | |
| C642 | | 1-130-338-91 | FILM | 0.01MF | 5% 630V | |
| C643 | ⚠ | 1-113-889-11 | CERAMIC\T1000PF | 20% | 250V | |
| C644 | | 1-163-005-11 | CERAMIC CHIP\T470PF | 10% | 50V | |
| C645 | | 1-104-664-11 | ELECT\T47MF | 20% | 25V | |
| C646 | | 1-126-943-11 | ELECT\T2200MF | 20% | 25V | |
| C647 | | 1-126-965-11 | ELECT\T22MF | 20% | 50V | |
| C648 | | 1-164-004-11 | CERAMIC CHIP\T0.1MF | 10% | 25V | |
| C650 | | 1-137-605-11 | MYLAR\T0.01MF | 10% | 250V | |
| C651 | | 1-163-275-11 | CERAMIC CHIP\T0.001MF | 5% | 50V | |
| C655 | | 1-126-941-11 | ELECT\T470MF | 20% | 25V | |
| C657 | | 1-104-664-11 | ELECT\T47MF | 20% | 25V | |
| C658 | | 1-104-331-11 | CERAMIC\T0.0022MF | 10% | 1KV | |
| C659 | | 1-104-705-11 | MYLAR\T0.1MF | 20% | 250V | |
| C660 | | 1-104-666-11 | ELECT\T220MF | 20% | 25V | |
| C661 | | 1-163-275-11 | CERAMIC CHIP\T0.001MF | 5% | 50V | |
| C662 | | 1-104-665-11 | ELECT\T100MF | 20% | 25V | |
| C663 | | 1-104-665-11 | ELECT\T100MF | 20% | 25V | |
| C664 | | 1-104-665-11 | ELECT\T100MF | 20% | 25V | |
| C665 | | 1-104-665-11 | ELECT\T100MF | 20% | 25V | |
| C801 | | 1-137-417-11 | MYLAR\T0.0047MF | | 10% 200V | |
| C802 | | 1-126-941-11 | ELECT\T470MF | 20% | 25V | |
| C803 | | 1-117-666-81 | FILM | 0.39MF | 5% 250V | |
| C804 | | 1-104-664-11 | ELECT\T47MF | 20% | 25V | |
| C805 | | 1-123-024-21 | ELECT\T33MF | | 160V | |
| C806 | | 1-102-228-00 | CERAMIC\T470PF | 10% | 500V | |
| C807 | | 1-107-957-11 | ELECT\T1MF | 20% | 250V | |
| C808 | | 1-163-275-11 | CERAMIC CHIP\T0.001MF | 5% | 50V | |
| C809 | | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C810 | | 1-102-050-00 | CERAMIC\T0.01MF | | 99% 500V | |
| C812 | | 1-107-366-11 | MYLAR\T0.022MF | 10% | 200V | |
| C813 | | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C814 | | 1-163-021-91 | CERAMIC CHIP\T0.01MF | 10% | 50V | |
| C816 | | 1-102-114-00 | CERAMIC\T470PF | 10% | 50V | |
| C817 | | 1-102-114-00 | CERAMIC\T470PF | 10% | 50V | |
| C818 | | 1-104-664-11 | ELECT\T47MF | 20% | 25V | |
| C819 | | 1-109-844-11 | FILM | 0.68MF | 5% 250V | |
| C820 | | 1-106-383-00 | MYLAR\T0.047MF | 10% | 200V | |
| C821 | ⚠ | 1-162-135-11 | CERAMIC\T560PF | 10% | 2KV | |
| C823 | | 1-162-131-11 | CERAMIC\T220PF | 10% | 2KV | |
| C824 | ⚠ | 1-117-644-21 | FILM | 10000PF | 3% 1.2KV | |
| C825 | | 1-107-492-11 | ELECT\T47MF | 20% | 160V | |
| C826 | | 1-137-417-11 | MYLAR\T0.0047MF | | 10% 200V | |
| C827 | ⚠ | 1-129-722-00 | FILM | 0.047MF | 5% 630V | |

| REF. NO. | | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|---|
| C828 | | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| | | | <CONNECTOR> | | | |
| CN301 | | 1-569-937-11 | SOCKET, CONNECTOR 21P | | | |
| CN302 | * | 1-564-511-11 | PLUG, CONNECTOR 8P | | | |
| CN303 | * | 1-569-930-11 | SOCKET, CONNECTOR 13P | | | |
| CN304 | * | 1-560-127-00 | PLUG, CONNECTOR (2.5MM) 7P | | | |
| CN305 | * | 1-564-510-11 | PLUG, CONNECTOR 7P | | | |
| CN601 | * | 1-691-291-11 | PIN, CONNECTOR (PC BOARD) 5P | | | |
| CN602 | * | 1-508-786-00 | PIN, CONNECTOR (5MM PITCH) 2P | | | |
| CN603 | * | 1-573-963-11 | PIN, CONNECTOR (PC BOARD) 3P | | | |
| CN605 | * | 1-564-508-11 | PLUG, CONNECTOR 5P | | | |
| CN606 | | 1-695-915-11 | TAB (CONTACT) | | | |
| CN801 | * | 1-580-798-11 | CONNECTOR PIN (DY) 6P | | | |
| CN803 | * | 1-564-508-11 | PLUG, CONNECTOR 5P | | | |
| | | | <DIODE> | | | |
| D101 | | 8-719-923-60 | DIODE MTZJ-T-77-9.1A | | | |
| D102 | | 8-719-923-60 | DIODE MTZJ-T-77-9.1A | | | |
| D103 | | 8-719-911-19 | DIODE ISS11S-25 (KV-VF14M77) | | | |
| D301 | | 8-719-109-89 | DIODE RD5.6ESB2 | | | |
| D302 | | 8-719-109-89 | DIODE RD5.6ESB2 | | | |
| D304 | | 8-719-923-60 | DIODE MTZJ-T-77-9.1A | | | |
| D305 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D307 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D308 | | 8-719-109-72 | DIODE RD3.9ESB2 | | | |
| D309 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D310 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D311 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D501 | | 8-719-110-49 | DIODE RD18ESB2 | | | |
| D502 | | 8-719-109-89 | DIODE RD5.6ESB2 | | | |
| D503 | | 8-719-908-03 | DIODE GP08D | | | |
| D506 | | 8-719-302-43 | DIODE EL1Z | | | |
| D507 | | 8-719-302-43 | DIODE EL1Z | | | |
| D601 | ⚠ | 8-719-018-79 | DIODE D6SB60LF | | | |
| D602 | | 8-719-911-55 | DIODE U05G | | | |
| D603 | | 8-719-109-97 | DIODE RD6.8ESB2 | | | |
| D604 | | 8-719-911-55 | DIODE U05G | | | |
| D605 | | 8-719-979-50 | DIODE EGP30D | | | |
| D606 | | 8-719-063-73 | DIODE D1NL20U-TR | | | |
| D607 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D608 | | 8-719-110-49 | DIODE RD18ESB2 | | | |
| D609 | | 8-719-028-45 | DIODE D2L20U | | | |
| D610 | | 8-719-028-45 | DIODE D2L20U | | | |
| D611 | | 8-719-911-55 | DIODE U05G | | | |
| D612 | | 8-719-312-10 | DIODE RU4AM-T3 | | | |
| D613 | | 8-719-109-97 | DIODE RD6.8ESB2 | | | |
| D614 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D615 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D616 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D617 | | 8-719-311-31 | DIODE RU-1P | | | |
| D618 | | 8-719-063-73 | DIODE D1NL20U-TR | | | |
| D619 | | 8-719-510-02 | DIODE D1NS4 | | | |
| D620 | | 8-719-063-73 | DIODE D1NL20U-TR | | | |
| D621 | | 8-719-510-48 | DIODE D1N20R | | | |

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| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| D622 | 8-719-911-19 | DIODE 1SS119-25 | |
| D623 | 8-719-110-17 | DIODE RD10ESB2 | |
| D624 | 8-719-109-97 | DIODE RD6.8ESB2 | |
| D625 | 8-719-510-73 | DIODE S3L20UF4 | |
| D626 | 8-719-948-45 | DIODE ERA22-08 | |
| D627 | 8-719-032-12 | DIODE D1NS6 | |
| D628 | 8-719-911-19 | DIODE 1SS119-25 | |
| D629 | 8-719-911-19 | DIODE 1SS119-25 | |
| D630 | 8-719-110-49 | DIODE RD18ESB2 | |
| D631 | 8-719-911-19 | DIODE 1SS119-25 | |
| D632 | 8-719-911-19 | DIODE 1SS119-25 | |
| D633 | 8-719-911-19 | DIODE 1SS119-25 | |
| D634 | 8-719-110-88 | DIODE RD39ESB2 | |
| D801 | 8-719-302-43 | DIODE EL1Z | |
| D802 | 8-719-911-19 | DIODE 1SS119-25 | |
| D803 | 8-719-302-43 | DIODE EL1Z | |
| D804 | 8-719-908-03 | DIODE GP08D | |
| D805 | 8-719-921-44 | DIODE MTZJ-5.1C | |
| D806 | 8-719-911-19 | DIODE 1SS119-25 | |
| D807 | 8-719-908-03 | DIODE GP08D | |
| D810 | 8-719-945-80 | DIODE ERC06-15S | |
| D811 | 8-719-979-85 | DIODE EGP20G | |
| | | <FERRITE BEAD> | |
| FB101 | 1-410-397-21 | FERRITE 1.1UH | |
| FB102 | 1-410-397-21 | FERRITE 1.1UH | |
| FB601 | 1-410-397-21 | FERRITE 1.1UH | |
| FB602 | 1-410-397-21 | FERRITE 1.1UH | |
| FB603 | 1-410-397-21 | FERRITE 1.1UH | |
| FB606 | 1-410-397-21 | FERRITE 1.1UH | |
| FB607 | 1-410-397-21 | FERRITE 1.1UH | |
| FB608 | 1-410-397-21 | FERRITE 1.1UH | |
| FB609 | 1-410-397-21 | FERRITE 1.1UH | |
| FB610 | 1-410-397-21 | FERRITE 1.1UH | |
| FB612 | 1-412-911-11 | FERRITE 0UH | |
| FB613 | 1-410-397-21 | FERRITE 1.1UH | |
| FB620 | 1-410-397-21 | FERRITE 1.1UH | |
| FB801 | 1-410-397-21 | FERRITE 1.1UH | |
| | | <IC> | |
| IC101 | 8-755-042-02 | IC S-80743AL-A7-S (KV-VF14M77) | |
| IC103 | 8-749-925-00 | IC TK11819MTL | |
| IC301 | 8-752-088-39 | IC CXA2130S | |
| IC501 | 8-759-444-83 | IC LA7840L | |
| IC601 | 8-759-471-81 | IC PQ05RD11 | |
| IC602 | 8-759-459-99 | IC PQ09RD11 | |
| IC603 | 8-759-390-48 | IC UPC2406AHF | |
| IC604 | 8-759-098-24 | IC PQ30RV11 | |
| IC605 | 8-749-921-21 | IC SI-3120C | |
| IC606 | 8-749-014-48 | IC STR-F6656 | |
| IC607 ⚠ | 8-749-920-61 | IC SE-135N | |
| IC608 | 8-759-459-99 | IC PQ09RD11 | |
| IC801 | 8-759-729-03 | IC NJM2903D | |
| | | <JACK> | |
| J101 | 1-779-204-11 | JACK, PIN 2P | |

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| | | <CHIP CONDUCTOR> | |
| JR1 | 1-216-295-91 | SHORT 0 | |
| | | <COIL> | |
| L101 | 1-414-856-11 | INDUCTOR 10UH | |
| L102 | 1-414-856-11 | INDUCTOR 10UH | |
| L103 | 1-414-856-11 | INDUCTOR 10UH | |
| L104 | 1-414-856-11 | INDUCTOR 10UH | |
| L105 | 1-414-856-11 | INDUCTOR 10UH | |
| L106 | 1-414-856-11 | INDUCTOR 10UH | |
| L107 | 1-410-444-11 | INDUCTOR 1.2MMH | |
| L108 | 1-414-856-11 | INDUCTOR 10UH | |
| L302 | 1-414-856-11 | INDUCTOR 10UH | |
| L305 | 1-414-187-11 | INDUCTOR 47UH | |
| L501 | 1-412-533-21 | INDUCTOR 47UH | |
| L601 | 1-412-525-31 | INDUCTOR 10UH | |
| L602 | 1-412-533-21 | INDUCTOR 47UH | |
| L603 | 1-412-541-41 | INDUCTOR 220UH | |
| L604 | 1-406-983-11 | INDUCTOR 1MMH | |
| L605 | 1-412-534-31 | INDUCTOR 56UH | |
| L801 | 1-412-527-11 | INDUCTOR 15UH | |
| L802 | 1-411-153-11 | COIL, HORIZONTAL LINEARITY | |
| L803 | 1-406-677-11 | INDUCTOR 10MMH | |
| L804 | 1-414-493-41 | INDUCTOR 4.7MMH | |
| L805 | 1-459-111-00 | INDUCTOR 10MMH | |
| L807 | 1-414-187-11 | INDUCTOR 47UH | |
| L808 | 1-406-982-41 | INDUCTOR 680UH | |
| L809 | 1-469-013-31 | INDUCTOR 18UH | |
| | | <PHOTO COUPLER> | |
| PH601 | 8-749-010-64 | PHOTO COUPLER PC123F2 | |
| | | <PROTECTOR> | |
| ⋈PM601 ⚠ | 1-809-054-71 | MODULE, PROTECTOR PM-21 | |
| | | <IC LINK> | |
| PS601 | 1-532-686-21 | LINK, IC 2.7A/150V | |
| PS602 | 1-532-686-21 | LINK, IC 2.7A/150V | |
| PS603 | 1-532-686-21 | LINK, IC 2.7A/150V | |
| PS604 | 1-532-686-21 | LINK, IC 2.7A/150V | |
| | | <TRANSISTOR> | |
| Q101 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | |
| Q102 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | |
| Q103 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | |
| Q305 | 8-729-216-22 | TRANSISTOR 2SA1162-G | |
| Q501 | 8-729-421-22 | TRANSISTOR UN2211 | |
| Q502 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | |
| Q503 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | |
| Q601 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | |
| Q602 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | |
| Q604 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | |

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| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| Q605 | 8-729-044-30 | TRANSISTOR 2SK2845-LB102 | | | |
| Q606 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | | | |
| Q607 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | | | |
| Q608 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | | | |
| Q609 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | | | |
| Q610 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | | | |
| Q801 | 8-729-038-82 | TRANSISTOR 2SK2251-01 | | | |
| Q802 | 8-729-047-13 | TRANSISTOR 2SC5388 | | | |
| Q803 | 8-729-040-55 | TRANSISTOR 2SK1482-T | | | |
| | | <RESISTOR> | | | |
| R101 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R102 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R103 | 1-216-121-91 | RES,CHIP | 1M | 5% 1/10W | |
| R104 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R105 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R106 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R107 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R108 | 1-216-022-00 | RES,CHIP | 75 | 5% 1/10W | |
| R109 | 1-216-081-00 | RES,CHIP | 22K | 5% 1/10W | |
| R110 | 1-216-081-00 | RES,CHIP | 22K | 5% 1/10W | |
| R111 | 1-216-295-91 | SHORT | 0 | | |
| R112 | 1-216-057-00 | RES,CHIP | 2.2K | 5% 1/10W | |
| R113 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R114 | 1-216-089-91 | RES,CHIP | 47K | 5% 1/10W | |
| R115 | 1-216-093-91 | RES,CHIP | 68K | 5% 1/10W | |
| R116 | 1-216-065-91 | RES,CHIP | 4.7K | 5% 1/10W | |
| R117 | 1-216-065-91 | RES,CHIP | 4.7K | 5% 1/10W | |
| R118 | 1-216-295-91 | SHORT | 0 (KV-VF14M40/VF14M70) | | |
| R123 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R124 | 1-216-097-91 | RES,CHIP | 100K | 5% 1/10W | |
| R125 | 1-216-295-91 | SHORT | 0 (KV-VF14M77) | | |
| R126 | 1-216-051-00 | RES,CHIP | 1.2K | 5% 1/10W | |
| R127 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R301 | 1-216-057-00 | RES,CHIP | 2.2K | 5% 1/10W | |
| R303 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R304 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R306 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R307 | 1-216-121-91 | RES,CHIP | 1M | 5% 1/10W | |
| R308 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R309 | 1-216-081-00 | RES,CHIP | 22K | 5% 1/10W | |
| R311 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R312 | 1-216-675-91 | METAL CHIP | 10K | 0.50% 1/10W | |
| R313 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R314 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R315 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R316 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R317 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R318 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R319 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R320 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R321 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R322 | 1-216-051-00 | RES,CHIP | 1.2K | 5% 1/10W | |
| R323 | 1-216-043-91 | RES,CHIP | 560 | 5% 1/10W | |
| R324 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R325 | 1-216-051-00 | RES,CHIP | 1.2K | 5% 1/10W | |
| R326 | 1-216-043-91 | RES,CHIP | 560 | 5% 1/10W | |
| R327 | 1-216-041-00 | RES,CHIP | 470 | 5% 1/10W | |
| R328 | 1-216-051-00 | RES,CHIP | 1.2K | 5% 1/10W | |
| R329 | 1-216-043-91 | RES,CHIP | 560 | 5% 1/10W | |
| R330 | 1-216-295-91 | SHORT | 0 | | |
| R331 | 1-216-065-91 | RES,CHIP | 4.7K | 5% 1/10W | |
| R332 | 1-216-081-00 | RES,CHIP | 22K | 5% 1/10W | |
| R333 | 1-216-129-00 | RES,CHIP | 2.2M | 5% 1/10W | |
| R334 | 1-216-057-00 | RES,CHIP | 2.2K | 5% 1/10W | |
| R336 | 1-216-057-00 | RES,CHIP | 2.2K | 5% 1/10W | |
| R337 | 1-216-057-00 | RES,CHIP | 2.2K | 5% 1/10W | |
| R338 | 1-216-057-00 | RES,CHIP | 2.2K | 5% 1/10W | |
| R340 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R341 | 1-216-033-00 | RES,CHIP | 220 | 5% 1/10W | |
| R342 | 1-216-033-00 | RES,CHIP | 220 | 5% 1/10W | |
| R343 | 1-216-033-00 | RES,CHIP | 220 | 5% 1/10W | |
| R356 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R360 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R361 | 1-216-069-00 | RES,CHIP | 6.8K | 5% 1/10W | |
| R362 | 1-216-085-00 | RES,CHIP | 33K | 5% 1/10W | |
| R363 | 1-216-121-91 | RES,CHIP | 1M | 5% 1/10W | |
| R364 | 1-216-045-00 | RES,CHIP | 680 | 5% 1/10W | |
| R502 | 1-216-089-91 | RES,CHIP | 47K | 5% 1/10W | |
| R503 | 1-216-081-00 | RES,CHIP | 22K | 5% 1/10W | |
| R504 | 1-216-097-91 | RES,CHIP | 100K | 5% 1/10W | |
| R505 | 1-247-843-11 | CARBON | 3.3K | 5% 1/4W | |
| R506 | 1-216-097-91 | RES,CHIP | 100K | 5% 1/10W | |
| R507 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R508 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R509 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R510 | 1-216-097-91 | RES,CHIP | 100K | 5% 1/10W | |
| R512 | 1-215-888-00 | METAL OXIDE | 220 | 5% 2W F | |
| R513 | 1-216-065-91 | RES,CHIP | 4.7K | 5% 1/10W | |
| R514 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R515 | 1-216-377-11 | METAL OXIDE | 4.7 | 5% 2W F | |
| R516 | 1-249-385-11 | CARBON | 2.2 | 5% 1/4W F | |
| R517 | 1-216-065-91 | RES,CHIP | 4.7K | 5% 1/10W | |
| R518 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R519 | 1-249-443-11 | CARBON | 0.47 | 5% 1/4W F | |
| R520 | 1-216-089-91 | RES,CHIP | 47K | 5% 1/10W | |
| R601 | 1-216-033-00 | RES,CHIP | 220 | 5% 1/10W | |
| R603 | 1-218-265-11 | METAL | 8.2M | 5% 1W | |
| R604 | 1-260-133-11 | CARBON | 680K | 5% 1/2W | |
| R605 | 1-202-933-61 | FUSIBLE | 0.1 | 10% 1/2W F | |
| R606 | 1-216-033-00 | RES,CHIP | 220 | 5% 1/10W | |
| R607 | 1-216-389-11 | METAL OXIDE | 1 | 5% 3W F | |
| R608 | 1-216-077-91 | RES,CHIP | 15K | 5% 1/10W | |
| R609 | 1-215-917-11 | METAL OXIDE | 1K | 5% 3W F | |
| R611 | 1-216-077-91 | RES,CHIP | 15K | 5% 1/10W | |
| R612 | 1-249-482-11 | CARBON | 4.7 | 5% 1/2W F | |
| R613 | 1-249-418-11 | CARBON | 1.2K | 5% 1/4W F | |
| ⋈R614 | ⚠ 1-249-405-11 | CARBON | 100 | 5% 1/4W F | |
| R615 | 1-216-366-00 | METAL OXIDE | 0.56 | 5% 2W F | |
| R616 | 1-247-831-91 | CARBON | 1K | 5% 1/4W | |
| R617 | 1-202-968-11 | CEMENTED | 1.2 | 5% 10W | |
| R618 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R619 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R620 | 1-216-077-91 | RES,CHIP | 15K | 5% 1/10W | |
| R621 | 1-249-393-11 | CARBON | 10 | 5% 1/4W | |
| R622 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |

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|---|---|---|---|---|---|
| R623 | 1-216-045-00 | RES,CHIP | 680 | 5% 1/10W | |
| R624 | 1-260-079-11 | CARBON | 22 | 5% 1/2W | |
| R626 | 1-240-205-91 | CARBON | 22M | 5% 1/2W | |
| R627 | 1-249-377-11 | CARBON | 0.47 | 5% 1/4W | F |
| R628 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R629 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R630 | 1-247-903-00 | CARBON | 1M | 5% 1/4W | |
| R631 | 1-216-013-00 | RES,CHIP | 33 | 5% 1/10W | |
| R632 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R633 | 1-216-077-91 | RES,CHIP | 15K | 5% 1/10W | |
| R634 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R635 | 1-216-077-91 | RES,CHIP | 15K | 5% 1/10W | |
| R636 | 1-215-927-00 | METAL OXIDE | 47K | 5% 3W | F |
| R637 | 1-216-093-91 | RES,CHIP | 68K | 5% 1/10W | |
| ⋈R638 | 1-249-405-11 | CARBON | 100 | 5% 1/4W | F |
| R639 | 1-216-055-00 | RES,CHIP | 1.8K | 5% 1/10W | |
| R640 | 1-216-061-00 | RES,CHIP | 3.3K | 5% 1/10W | |
| R641 | 1-216-041-00 | RES,CHIP | 470 | 5% 1/10W | |
| R644 | 1-216-055-00 | RES,CHIP | 1.8K | 5% 1/10W | |
| R645 | 1-216-669-11 | METAL CHIP | 5.6K | 0.50% 1/10W | |
| R646 | 1-216-045-00 | RES,CHIP | 680 | 5% 1/10W | |
| R647 | 1-249-389-11 | CARBON | 4.7 | 5% 1/4W | F |
| R648 | 1-216-361-00 | METAL OXIDE | 0.22 | 5% 2W | F |
| R649 | 1-216-361-00 | METAL OXIDE | 0.22 | 5% 2W | F |
| R650 | 1-205-998-11 | CEMENTED | 1 | 5% 10W | |
| R651 | 1-216-013-00 | RES,CHIP | 33 | 5% 1/10W | |
| R652 | 1-216-045-00 | RES,CHIP | 680 | 5% 1/10W | |
| R653 | 1-216-669-11 | METAL CHIP | 5.6K | 0.50% 1/10W | |
| R655 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R656 | 1-216-077-91 | RES,CHIP | 15K | 5% 1/10W | |
| R657 | 1-215-485-00 | METAL | 470K | 1% 1/4W | |
| R658 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R659 | 1-216-077-91 | RES,CHIP | 15K | 5% 1/10W | |
| R660 | 1-216-033-00 | RES,CHIP | 220 | 5% 1/10W | |
| R661 | 1-216-033-00 | RES,CHIP | 220 | 5% 1/10W | |
| R662 | 1-247-815-91 | CARBON | 220 | 5% 1/4W | |
| R663 | 1-247-815-91 | CARBON | 220 | 5% 1/4W | |
| R664 | 1-260-117-11 | CARBON | 33K | 5% 1/2W | |
| R665 | 1-260-123-11 | CARBON | 100K | 5% 1/2W | |
| R666 | 1-216-057-00 | RES,CHIP | 2.2K | 5% 1/10W | |
| R667 | 1-216-051-00 | RES,CHIP | 1.2K | 5% 1/10W | |
| R668 | 1-216-485-11 | METAL OXIDE | 5.6K | 5% 3W | F |
| R669 | 1-216-639-11 | METAL CHIP | 330 | 0.50% 1/10W | |
| R670 | 1-216-653-11 | METAL CHIP | 1.2K | 0.50% 1/10W | |
| R671 | 1-216-033-00 | RES,CHIP | 220 | 5% 1/10W | |
| R673 | 1-216-033-00 | RES,CHIP | 220 | 5% 1/10W | |
| R674 | 1-216-485-11 | METAL OXIDE | 5.6K | 5% 3W | F |
| R675 | 1-216-049-91 | RES,CHIP | 1K | 5% 1/10W | |
| R677 | 1-216-025-91 | RES,CHIP | 100 | 5% 1/10W | |
| R678 | 1-216-510-11 | METAL OXIDE | 8.2K | 5% 5W | F |
| R801 | 1-218-762-11 | METAL CHIP | 270K | 0.50% 1/10W | |
| R802 | 1-215-857-11 | METAL OXIDE | 10 | 5% 1W | F |
| R803 | 1-260-290-71 | CARBON | 0.68 | 5% 1/2W | |
| R805 | 1-215-461-00 | METAL | 47K | 1% 1/4W | |
| R806 | 1-260-290-71 | CARBON | 0.68 | 5% 1/2W | |
| R807 | 1-260-316-51 | CARBON | 100 | 5% 1/2W | |
| R808 | 1-214-908-00 | METAL | 62K | 1% 1/2W | |
| R809 | 1-216-085-00 | RES,CHIP | 33K | 5% 1/10W | |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R811 | 1-216-057-00 | RES,CHIP | 2.2K | 5% 1/10W | |
| R812 | 1-216-687-11 | METAL CHIP | 33K | 0.50% 1/10W | |
| R814 | 1-218-756-11 | METAL CHIP | 150K | 0.50% 1/10W | |
| R816 | 1-216-685-11 | METAL CHIP | 27K | 0.50% 1/10W | |
| R817 | 1-216-057-00 | RES,CHIP | 2.2K | 5% 1/10W | |
| R818 | 1-216-681-11 | METAL CHIP | 18K | 0.50% 1/10W | |
| R819 | 1-216-077-91 | RES,CHIP | 15K | 5% 1/10W | |
| R821 | 1-249-391-11 | CARBON | 6.8 | 5% 1/4W | F |
| R822 | 1-249-411-11 | CARBON | 330 | 5% 1/4W | F |
| R823 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R824 | 1-216-687-11 | METAL CHIP | 33K | 0.50% 1/10W | |
| R825 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R826 | 1-215-892-11 | METAL OXIDE | 1K | 5% 2W | F |
| R827 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R828 | 1-216-097-91 | RES,CHIP | 100K | 5% 1/10W | |
| R829 | 1-249-421-11 | CARBON | 2.2K | 5% 1/4W | |
| R830 | 1-216-470-00 | METAL OXIDE | 18 | 5% 3W | F |
| R831 | 1-216-470-00 | METAL OXIDE | 18 | 5% 3W | F |
| R832 | 1-249-422-11 | CARBON | 2.7K | 5% 1/4W | F |
| R833 | 1-249-381-11 | CARBON | 1 | 5% 1/4W | F |
| R834 | 1-216-470-00 | METAL OXIDE | 18 | 5% 3W | F |
| R835 | 1-216-069-00 | RES,CHIP | 6.8K | 5% 1/10W | |
| R836 | 1-216-073-00 | RES,CHIP | 10K | 5% 1/10W | |
| R837 | 1-216-065-91 | RES,CHIP | 4.7K | 5% 1/10W | |
| R840 | 1-216-445-11 | METAL OXIDE | 12 | 5% 2W | F |

<RELAY>

| | | | |
|---|---|---|---|
| RY601 | ⚠ | 1-755-198-11 | RELAY, AC POWER |
| RY602 | ⚠ | 1-755-198-11 | RELAY, AC POWER |
| RY603 | ⚠ | 1-755-245-11 | RELAY, AC POWER |

<SWITCH>

| | | | |
|---|---|---|---|
| S801 | | 1-572-707-11 | SWITCH, LEVER |

<TRANSFORMER>

| | | | |
|---|---|---|---|
| T602 | ⚠ | 1-433-897-11 | TRANSFORMER, CONVERTER (SRT) |
| T604 | | 1-433-540-11 | TRANSFORMER, CONVERTER (SBT) |
| T801 | ⚠ | 1-453-309-11 | TRANSFORMER ASSY, FLYBACK (NX-4450//M3A4) |

<THERMISTOR>

| | | | |
|---|---|---|---|
| THP601 | ⚠ | 1-473-159-21 | THERMISTOR, POSITIVE |

<TEST PIN>

| | | | |
|---|---|---|---|
| TP601 | * | 1-508-784-21 | PIN, CONNECTOR (5MM PITCH) 1P |
| TP602 | * | 1-508-784-21 | PIN, CONNECTOR (5MM PITCH) 1P |

<TUNER>

| | | |
|---|---|---|
| TU101 | 8-598-449-10 | TUNER, FSS BTF-LG433 (EXCEPT KV-VF14M77) |
| TU101 | 8-598-451-30 | TUNER, FSS BTF-WG441 (KV-VF14M77) |

<CRYSTAL>

# CV

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

| REF. NO. | | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|---|
| X301 | | 1-567-504-11 | OSCILLATOR, CRYSTAL | | | |
| X302 | | 1-567-505-11 | OSCILLATOR, CRYSTAL | | | |
| ********** | | | | | | |
| | * | A-1332-023-A | CV BOARD MOUNTED | | | |
| | | | ********** | | | |
| | | 4-352-844-01 | PIN, LEAD, COATING | | | |
| | | 4-382-854-01 | SCREW (M3X8), P, SW (+) | | | |
| | | | <CAPACITOR> | | | |
| C701 | | 1-102-114-00 | CERAMIC\T470PF | 10% | 50V | |
| C702 | | 1-126-933-11 | ELECT\T100MF | 20% | 16V | |
| C703 | | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C704 | | 1-102-516-11 | CERAMIC\T27PF | 5% | 50V | |
| C705 | | 1-102-951-00 | CERAMIC\T15PF | 5% | 50V | |
| C706 | | 1-102-508-91 | CERAMIC\T10PF | 0.5PF | 50V | |
| C707 | | 1-107-651-11 | ELECT\T4.7MF | 20% | 250V | |
| C708 | | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C709 | | 1-101-006-00 | CERAMIC\T0.047MF | | | 50V |
| C710 | | 1-107-651-11 | ELECT\T4.7MF | 20% | 250V | |
| C711 | | 1-107-651-11 | ELECT\T4.7MF | 20% | 250V | |
| C712 | | 1-101-006-00 | CERAMIC\T0.047MF | | | 50V |
| C714 | | 1-101-006-00 | CERAMIC\T0.047MF | | | 50V |
| C715 | | 1-101-006-00 | CERAMIC\T0.047MF | | | 50V |
| C716 | | 1-102-157-00 | CERAMIC\T560PF | 10% | 500V | |
| C717 | | 1-102-157-00 | CERAMIC\T560PF | 10% | 500V | |
| C718 | | 1-102-157-00 | CERAMIC\T560PF | 10% | 500V | |
| C719 | | 1-102-074-00 | CERAMIC\T0.001MF | | 10% | 50V |
| C720 | | 1-162-114-00 | CERAMIC\T0.0047MF | | | 2KV |
| C721 | | 1-107-662-11 | ELECT\T22MF | 20% | 250V | |
| | | | <CONNECTOR> | | | |
| CN701 | * | 1-564-510-11 | PLUG, CONNECTOR 7P | | | |
| CN702 | | 1-695-915-11 | TAB (CONTACT) | | | |
| CN703 | * | 1-564-508-11 | PLUG, CONNECTOR 5P | | | |
| CN704 | | 1-695-915-11 | TAB (CONTACT) | | | |
| | | | <DIODE> | | | |
| D701 | | 8-719-109-71 | DIODE RD3.9ESB1 | | | |
| D702 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D702 | | 8-719-991-33 | DIODE 1SS133T-77 | | | |
| D703 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D703 | | 8-719-991-33 | DIODE 1SS133T-77 | | | |
| D704 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D704 | | 8-719-991-33 | DIODE 1SS133T-77 | | | |
| D705 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D705 | | 8-719-991-33 | DIODE 1SS133T-77 | | | |
| D707 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D707 | | 8-719-991-33 | DIODE 1SS133T-77 | | | |
| D709 | | 8-719-051-85 | DIODE HSS83TD | | | |
| D710 | | 8-719-051-85 | DIODE HSS83TD | | | |
| D711 | | 8-719-051-85 | DIODE HSS83TD | | | |
| D713 | | 8-719-109-71 | DIODE RD3.9ESB1 | | | |

| REF. NO. | | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|---|
| D714 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D714 | | 8-719-991-33 | DIODE 1SS133T-77 | | | |
| D715 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D715 | | 8-719-991-33 | DIODE 1SS133T-77 | | | |
| D716 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D716 | | 8-719-991-33 | DIODE 1SS133T-77 | | | |
| D717 | | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D717 | | 8-719-991-33 | DIODE 1SS133T-77 | | | |
| | | | <IC> | | | |
| IC701 | | 8-759-346-42 | IC TDA6101Q/N3 | | | |
| IC702 | | 8-759-346-42 | IC TDA6101Q/N3 | | | |
| IC703 | | 8-759-346-42 | IC TDA6101Q/N3 | | | |
| | | | <JACK> | | | |
| J701 | ⚠ | 1-451-470-21 | SOCKET, CRT | | | |
| | | | <COIL> | | | |
| L701 | | 1-410-667-31 | INDUCTOR | 22UH | | |
| | | | <TRANSISTOR> | | | |
| Q701 | | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | | | |
| Q701 | | 8-729-821-04 | TRANSISTOR 2SA1317-STU | | | |
| | | | <RESISTOR> | | | |
| R701 | | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R702 | | 1-214-929-00 | CARBON | 470K | 5% | 1/2W |
| R704 | | 1-215-413-00 | METAL | 470 | 1% | 1/4W |
| R707 | | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W |
| R708 | | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W |
| R709 | | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W |
| R710 | | 1-215-413-00 | METAL | 470 | 1% | 1/4W |
| R711 | | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W |
| R712 | | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R713 | | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W |
| R718 | | 1-249-424-11 | CARBON | 3.9K | 5% | 1/4W |
| R719 | | 1-249-424-11 | CARBON | 3.9K | 5% | 1/4W |
| R720 | | 1-249-424-11 | CARBON | 3.9K | 5% | 1/4W |
| R723 | | 1-247-893-11 | CARBON | 390K | 5% | 1/4W |
| R725 | | 1-215-903-11 | METAL OXIDE | 68K | 5% | 2W F |
| R727 | | 1-215-928-11 | METAL OXIDE | 68K | 5% | 3W F |
| R729 | | 1-215-928-11 | METAL OXIDE | 68K | 5% | 3W F |
| R731 | | 1-202-818-00 | SOLID | 1K | 20% | 1/2W |
| R732 | | 1-202-818-00 | SOLID | 1K | 20% | 1/2W |
| R733 | | 1-202-818-00 | SOLID | 1K | 20% | 1/2W |
| R734 | | 1-247-739-11 | CARBON | 100 | 5% | 1/2W |
| R738 | | 1-260-123-11 | CARBON | 100K | 5% | 1/2W |
| R740 | | 1-216-341-11 | METAL OXIDE | 0.22 | 5% | 1W F |
| | | | <VARIABLE RESISTOR> | | | |
| RV701 | | 1-241-714-11 | RES, ADJ, METAL FILM 110M | | | |

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

F

| REF. NO. | | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|---|
| | * | A-1241-367-A | F BOARD MOUNTED ********** | | | |
| | | 1-533-223-11 | CLIP, FUSE | | | |
| | | | <CAPACITOR> | | | |
| C901 | ⚠ | 1-104-705-11 | MYLAR\T0.1MF | 20% | 250V | |
| C902 | ⚠ | 1-104-705-11 | MYLAR\T0.1MF | 20% | 250V | |
| C903 | | 1-113-924-11 | CERAMIC\T0.0047MF | 20% | 250V | |
| | | | <CONNECTOR> | | | |
| CN901 | * | 1-580-843-11 | PIN, CONNECTOR (POWER) | | | |
| CN902 | * | 1-691-291-11 | PIN, CONNECTOR (PC BOARD) 5P | | | |
| CN903 | | 1-695-915-11 | TAB (CONTACT) | | | |
| | | | <FUSE> | | | |
| F901 | ⚠ | 1-532-299-00 | FUSE, TIME-LAG 5A/250V | | | |
| | | | <RESISTOR> | | | |
| R901 | | 1-202-719-00 | SOLID | 1M | 20% | 1/2W |
| R902 | | 1-202-968-11 | CEMENTED | 1.2 | 5% | 10W |
| | | | <TRANSFORMER> | | | |
| T901 | ⚠ | 1-424-461-11 | TRANSFORMER, LINE FILTER | | | |
| T902 | ⚠ | 1-424-461-11 | TRANSFORMER, LINE FILTER | | | |

**********

# VIDEO BLOCK

# FF10 MA10

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| * | A-1241-368-A | FF10 BOARD MOUNTED | |
| | | ********** | |
| | | <CONNECTOR> | |
| CN1301 | 1-784-041-41 | CONNECTOR, BOARD TO BOARD 9P | |
| CN1301 | 1-784-041-41 | CONNECTOR, BOARD TO BOARD 9P | |
| | | <DIODE> | |
| D1303 | 8-719-053-43 | DIODE SLR-325VCT31 | |
| D1304 | 8-719-053-43 | DIODE SLR-325VCT31 | |
| D1305 | 8-719-053-43 | DIODE SLR-325VCT31 | |
| D1306 | 8-719-053-43 | DIODE SLR-325VCT31 | |
| D1307 | 8-719-053-43 | DIODE SLR-325VCT31 | |
| D1308 | 8-719-061-96 | DIODE SLR-325DCT31 | |
| | | <SWITCH> | |
| S1301 | 1-572-200-11 | SWITCH, KEYBOARD | |
| S1301 | 1-572-200-11 | SWITCH, KEYBOARD | |
| ********** | | | |
| * | A-1306-587-A | MA10 COMPLETE (EXCEPT KV-VF14M77) | |
| * | A-1306-586-A | MA10 COMPLETE (KV-VF14M77) | |
| | | ********** | |
| * | A-1306-587-A | COMPLETE PWB, MA10 | |
| * | 3-960-273-01 | SPACER, TOP END | |
| * | 3-960-274-01 | SPACER, LED | |
| | 4-382-854-01 | SCREW (M3X8), P, SW (+) | |
| | 4-382-854-01 | SCREW (M3X8), P, SW (+) | |
| | | <CAPACITOR> | |
| C001 | 1-163-104-00 | CERAMIC CHIP\T30PF 5% 50V | |
| C001 | 1-163-104-00 | CERAMIC CHIP\T30PF 5% 50V | |
| C002 | 1-163-235-11 | CERAMIC CHIP\T22PF 5% 50V | |
| C002 | 1-163-235-11 | CERAMIC CHIP\T22PF 5% 50V | |
| C004 | 1-163-038-91 | CERAMIC CHIP\T0.1MF 25V | |
| C004 | 1-163-038-91 | CERAMIC CHIP\T0.1MF 25V | |
| C006 | 1-163-241-11 | CERAMIC CHIP\T39PF 5% 50V | |
| C006 | 1-163-241-11 | CERAMIC CHIP\T39PF 5% 50V | |
| C007 | 1-163-241-11 | CERAMIC CHIP\T39PF 5% 50V | |
| C007 | 1-163-241-11 | CERAMIC CHIP\T39PF 5% 50V | |
| C008 | 1-163-031-11 | CERAMIC CHIP\T0.01MF 50V | |
| C008 | 1-163-031-11 | CERAMIC CHIP\T0.01MF 50V | |
| C013 | 1-126-964-11 | ELECT\T10MF 20% 50V | |
| C013 | 1-126-964-11 | ELECT\T10MF 20% 50V | |
| C014 | 1-163-038-91 | CERAMIC CHIP\T0.1MF 25V | |
| C014 | 1-163-038-91 | CERAMIC CHIP\T0.1MF 25V | |
| C015 | 1-104-665-11 | ELECT\T100MF 20% 10V | |
| C015 | 1-104-665-11 | ELECT\T100MF 20% 10V | |
| C019 | 1-163-001-11 | CERAMIC CHIP\T220PF 10% 50V | |
| C019 | 1-163-001-11 | CERAMIC CHIP\T220PF 10% 50V | |
| C020 | 1-163-809-11 | CERAMIC CHIP\T0.047MF 10% 25V | |
| C020 | 1-163-809-11 | CERAMIC CHIP\T0.047MF 10% 25V | |

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| C022 | 1-124-589-11 | ELECT\T47MF 20% 16V | |
| C022 | 1-124-589-11 | ELECT\T47MF 20% 16V | |
| C024 | 1-163-259-91 | CERAMIC CHIP\T220PF 5% 50V | |
| C024 | 1-163-259-91 | CERAMIC CHIP\T220PF 5% 50V | |
| C025 | 1-163-259-91 | CERAMIC CHIP\T220PF 5% 50V | |
| C025 | 1-163-259-91 | CERAMIC CHIP\T220PF 5% 50V | |
| C028 | 1-163-227-11 | CERAMIC CHIP\T10PF 0.5PF 50V | |
| C028 | 1-163-227-11 | CERAMIC CHIP\T10PF 0.5PF 50V | |
| C202 | 1-126-960-11 | ELECT\T1MF 20% 50V | |
| C202 | 1-126-960-11 | ELECT\T1MF 20% 50V | |
| C208 | 1-126-963-11 | ELECT\T4.7MF 20% 50V | |
| C208 | 1-126-963-11 | ELECT\T4.7MF 20% 50V | |
| C209 | 1-124-252-00 | ELECT\T0.33MF 20% 50V | |
| C209 | 1-124-252-00 | ELECT\T0.33MF 20% 50V | |
| C210 | 1-163-009-11 | CERAMIC CHIP\T0.001MF 10% 50V | |
| C210 | 1-163-009-11 | CERAMIC CHIP\T0.001MF 10% 50V | |
| C211 | 1-119-821-11 | ELECT MELF 2.2MF 20% 50V | |
| C211 | 1-119-821-11 | ELECT MELF 2.2MF 20% 50V | |
| C214 | 1-104-666-11 | ELECT\T220MF 20% 25V | |
| C214 | 1-104-666-11 | ELECT\T220MF 20% 25V | |
| C216 | 1-124-261-00 | ELECT\T10MF 20% 50V | |
| C216 | 1-124-261-00 | ELECT\T10MF 20% 50V | |
| C217 | 1-126-959-11 | ELECT\T0.47MF 20% 50V | |
| C217 | 1-126-959-11 | ELECT\T0.47MF 20% 50V | |
| C218 | 1-107-914-31 | ELECT\T1000MF 20% 50V | |
| C218 | 1-107-914-31 | ELECT\T1000MF 20% 50V | |
| C219 | 1-163-038-91 | CERAMIC CHIP\T0.1MF 25V | |
| C219 | 1-163-038-91 | CERAMIC CHIP\T0.1MF 25V | |
| C220 | 1-126-942-61 | ELECT\T1000MF 20% 25V | |
| C220 | 1-126-942-61 | ELECT\T1000MF 20% 25V | |
| C401 | 1-163-035-00 | CERAMIC CHIP\T0.047MF 50V | |
| C401 | 1-163-035-00 | CERAMIC CHIP\T0.047MF 50V | |
| C402 | 1-124-589-11 | ELECT\T47MF 20% 6.3V | |
| C402 | 1-124-589-11 | ELECT\T47MF 20% 6.3V | |
| C405 | 1-104-664-11 | ELECT\T47MF 20% 16V | |
| C405 | 1-104-664-11 | ELECT\T47MF 20% 16V | |
| C406 | 1-163-031-11 | CERAMIC CHIP\T0.01MF 50V | |
| C406 | 1-163-031-11 | CERAMIC CHIP\T0.01MF 50V | |
| C407 | 1-163-031-11 | CERAMIC CHIP\T0.01MF 50V | |
| C407 | 1-163-031-11 | CERAMIC CHIP\T0.01MF 50V | |
| C408 | 1-164-004-11 | CERAMIC CHIP\T0.1MF 10% 25V | |
| C408 | 1-164-004-11 | CERAMIC CHIP\T0.1MF 10% 25V | |
| C409 | 1-124-589-11 | ELECT\T47MF 20% 6.3V | |
| C409 | 1-124-589-11 | ELECT\T47MF 20% 6.3V | |
| C410 | 1-163-035-00 | CERAMIC CHIP\T0.047MF 50V | |
| C410 | 1-163-035-00 | CERAMIC CHIP\T0.047MF 50V | |
| C412 | 1-126-160-11 | ELECT\T1MF 20% 50V | |
| C412 | 1-126-160-11 | ELECT\T1MF 20% 50V | |
| C413 | 1-163-263-11 | CERAMIC CHIP\T330PF 5% 50V | |
| C413 | 1-163-263-11 | CERAMIC CHIP\T330PF 5% 50V | |
| C414 | 1-124-589-11 | ELECT\T47MF 20% 6.3V | |
| C414 | 1-124-589-11 | ELECT\T47MF 20% 6.3V | |
| C415 | 1-130-487-00 | MYLAR\T0.022MF 5% 50V | |
| C415 | 1-130-487-00 | MYLAR\T0.022MF 5% 50V | |
| C416 | 1-163-031-11 | CERAMIC CHIP\T0.01MF 50V | |
| C416 | 1-163-031-11 | CERAMIC CHIP\T0.01MF 50V | |
| C417 | 1-124-248-00 | ELECT\T22MF 20% 25V | |
| C417 | 1-124-248-00 | ELECT\T22MF 20% 25V | |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| C418 | 1-130-488-00 | MYLAR\T0.027MF | 5% | 50V | |
| C418 | 1-130-488-00 | MYLAR\T0.027MF | 5% | 50V | |
| C419 | 1-124-257-00 | ELECT\T2.2MF | 20% | 50V | |
| C419 | 1-124-257-00 | ELECT\T2.2MF | 20% | 50V | |
| C421 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C421 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C422 | 1-163-018-00 | CERAMIC CHIP\T0.0056MF | 10% | 50V | |
| C422 | 1-163-018-00 | CERAMIC CHIP\T0.0056MF | 10% | 50V | |
| C424 | 1-126-160-11 | ELECT\T1MF | 20% | 50V | |
| C424 | 1-126-160-11 | ELECT\T1MF | 20% | 50V | |
| C425 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C425 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C430 | 1-163-227-11 | CERAMIC CHIP\T10PF | 0.5PF | 50V | |
| C430 | 1-163-227-11 | CERAMIC CHIP\T10PF | 0.5PF | 50V | |
| C431 | 1-163-231-11 | CERAMIC CHIP\T15PF | 5% | 50V | |
| C431 | 1-163-231-11 | CERAMIC CHIP\T15PF | 5% | 50V | |
| C432 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C432 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C435 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C435 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C436 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C436 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C441 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C441 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C455 | 1-126-924-11 | ELECT\T330MF | 20% | 6.3V | |
| C455 | 1-126-924-11 | ELECT\T330MF | 20% | 6.3V | |
| C456 | 1-163-009-11 | CERAMIC CHIP\T0.001MF | 10% | 50V | |
| C456 | 1-163-009-11 | CERAMIC CHIP\T0.001MF | 10% | 50V | |
| C457 | 1-163-009-11 | CERAMIC CHIP\T0.001MF | 10% | 50V | |
| C457 | 1-163-009-11 | CERAMIC CHIP\T0.001MF | 10% | 50V | |
| C458 | 1-163-009-11 | CERAMIC CHIP\T0.001MF | 10% | 50V | |
| C458 | 1-163-009-11 | CERAMIC CHIP\T0.001MF | 10% | 50V | |
| C460 | 1-163-009-11 | CERAMIC CHIP\T0.001MF | 10% | 50V | |
| C460 | 1-163-009-11 | CERAMIC CHIP\T0.001MF | 10% | 50V | |
| C701 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C701 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C705 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C705 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C706 | 1-163-237-11 | CERAMIC CHIP\T27PF | 5% | 50V | |
| C706 | 1-163-237-11 | CERAMIC CHIP\T27PF | 5% | 50V | |
| C707 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C707 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C709 | 1-163-241-11 | CERAMIC CHIP\T39PF | 5% | 50V | |
| C709 | 1-163-241-11 | CERAMIC CHIP\T39PF | 5% | 50V | |
| C711 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C711 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C712 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C712 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C713 | 1-163-241-11 | CERAMIC CHIP\T39PF | 5% | 50V | |
| C713 | 1-163-241-11 | CERAMIC CHIP\T39PF | 5% | 50V | |
| C716 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C716 | 1-163-033-91 | CERAMIC CHIP\T0.022MF | | 50V | |
| C717 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C717 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C718 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C718 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C719 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C719 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| C720 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C720 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C721 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C721 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C722 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C722 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C723 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C723 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C724 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C724 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C725 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C725 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |
| C726 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C726 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C727 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C727 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C728 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C728 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C801 | 1-164-492-11 | CERAMIC CHIP\T0.15MF | 10% | 16V | |
| C801 | 1-164-492-11 | CERAMIC CHIP\T0.15MF | 10% | 16V | |
| C803 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C803 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C804 | 1-163-241-11 | CERAMIC CHIP\T39PF | 5% | 50V | |
| C804 | 1-163-241-11 | CERAMIC CHIP\T39PF | 5% | 50V | |
| C807 | 1-163-227-11 | CERAMIC CHIP\T10PF | 0.5PF | 50V | |
| C807 | 1-163-227-11 | CERAMIC CHIP\T10PF | 0.5PF | 50V | |
| C808 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C808 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C813 | 1-163-251-11 | CERAMIC CHIP\T100PF | 5% | 50V | |
| C813 | 1-163-251-11 | CERAMIC CHIP\T100PF | 5% | 50V | |
| C815 | 1-163-239-11 | CERAMIC CHIP\T33PF | 5% | 50V | |
| C815 | 1-163-239-11 | CERAMIC CHIP\T33PF | 5% | 50V | |
| C816 | 1-163-037-11 | CERAMIC CHIP\T0.022MF | 10% | 50V | |
| C816 | 1-163-037-11 | CERAMIC CHIP\T0.022MF | 10% | 50V | |
| C817 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C817 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C818 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C818 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C819 | 1-163-131-00 | CERAMIC CHIP\T390PF | 5% | 50V | |
| C819 | 1-163-131-00 | CERAMIC CHIP\T390PF | 5% | 50V | |
| C820 | 1-163-809-11 | CERAMIC CHIP\T0.047MF | 10% | 25V | |
| C820 | 1-163-809-11 | CERAMIC CHIP\T0.047MF | 10% | 25V | |
| C822 | 1-124-248-00 | ELECT\T22MF | 20% | 25V | |
| C822 | 1-124-248-00 | ELECT\T22MF | 20% | 25V | |
| C823 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C823 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C824 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C824 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C825 | 1-163-257-11 | CERAMIC CHIP\T180PF | 5% | 50V | |
| C825 | 1-163-257-11 | CERAMIC CHIP\T180PF | 5% | 50V | |
| C828 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C828 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | 50V | |
| C829 | 1-164-346-11 | CERAMIC CHIP\T1MF | | 16V | |
| C829 | 1-164-346-11 | CERAMIC CHIP\T1MF | | 16V | |
| C832 | 1-115-871-11 | ELECT\T1MF | 20% | 50V | |
| C832 | 1-115-871-11 | ELECT\T1MF | 20% | 50V | |
| C834 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | 25V | |

# MA10

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| C834 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C835 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C835 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C837 | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C837 | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C840 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C840 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C841 | 1-126-795-11 | ELECT\T10MF | 20% | 50V | |
| C841 | 1-126-795-11 | ELECT\T10MF | 20% | 50V | |
| C842 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C842 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C843 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C843 | 1-104-665-11 | ELECT\T100MF | 20% | 10V | |
| C844 | 1-126-795-11 | ELECT\T10MF | 20% | 50V | |
| C844 | 1-126-795-11 | ELECT\T10MF | 20% | 50V | |
| C845 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C845 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C846 | 1-163-021-91 | CERAMIC CHIP\T0.01MF | 10% | 50V | |
| C846 | 1-163-021-91 | CERAMIC CHIP\T0.01MF | 10% | 50V | |
| C847 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C847 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C848 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C848 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C849 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C849 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C850 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C850 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C851 | 1-163-809-11 | CERAMIC CHIP\T0.047MF | 10% | 25V | |
| C851 | 1-163-809-11 | CERAMIC CHIP\T0.047MF | 10% | 25V | |
| C852 | 1-124-589-11 | ELECT\T47MF | 20% | 6.3V | |
| C852 | 1-124-589-11 | ELECT\T47MF | 20% | 6.3V | |
| C853 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C853 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C854 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C854 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C855 | 1-163-809-11 | CERAMIC CHIP\T0.047MF | 10% | 25V | |
| C855 | 1-163-809-11 | CERAMIC CHIP\T0.047MF | 10% | 25V | |
| C856 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C856 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C857 | 1-163-037-11 | CERAMIC CHIP\T0.022MF | 10% | 50V | |
| C857 | 1-163-037-11 | CERAMIC CHIP\T0.022MF | 10% | 50V | |
| C858 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C858 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C859 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C859 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C860 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C860 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C861 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C861 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C862 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C862 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C863 | 1-124-589-11 | ELECT\T47MF | 20% | 10V | |
| C863 | 1-124-589-11 | ELECT\T47MF | 20% | 10V | |
| C864 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C864 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C865 | 1-164-004-11 | CERAMIC CHIP\T0.1MF | 10% | 25V | |
| C865 | 1-164-004-11 | CERAMIC CHIP\T0.1MF | 10% | 25V | |
| C866 | 1-164-004-11 | CERAMIC CHIP\T0.1MF | 10% | 25V | |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| C866 | 1-164-004-11 | CERAMIC CHIP\T0.1MF | 10% | 25V | |
| C867 | 1-163-021-91 | CERAMIC CHIP\T0.01MF | 10% | 50V | |
| C867 | 1-163-021-91 | CERAMIC CHIP\T0.01MF | 10% | 50V | |
| C868 | 1-163-235-11 | CERAMIC CHIP\T22PF | 5% | 50V | |
| C868 | 1-163-235-11 | CERAMIC CHIP\T22PF | 5% | 50V | |
| C879 | 1-163-255-91 | CERAMIC CHIP\T150PF | 5% | 50V | |
| C879 | 1-163-255-91 | CERAMIC CHIP\T150PF | 5% | 50V | |
| C901 | 1-126-157-11 | ELECT\T10MF | 20% | 16V | |
| C901 | 1-126-157-11 | ELECT\T10MF | 20% | 16V | |
| C904 | 1-126-964-11 | ELECT\T10MF | 20% | 50V | |
| C904 | 1-126-964-11 | ELECT\T10MF | 20% | 50V | |
| C905 | 1-164-004-11 | CERAMIC CHIP\T0.1MF | 10% | 25V | |
| C905 | 1-164-004-11 | CERAMIC CHIP\T0.1MF | 10% | 25V | |
| C906 | 1-127-720-91 | ELECT MELF | 470MF | 20% 16V | |
| C906 | 1-127-720-91 | ELECT MELF | 470MF | 20% 16V | |
| C907 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C907 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C908 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C908 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C912 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C912 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C917 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C917 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C919 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C919 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C920 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C920 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C923 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C923 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C1001 | 1-137-397-11 | MYLAR\T0.047MF | 5% | 100V | |
| C1001 | 1-137-397-11 | MYLAR\T0.047MF | 5% | 100V | |
| C1002 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C1002 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C1003 | 1-163-021-91 | CERAMIC CHIP\T0.01MF | 10% | 50V | |
| C1003 | 1-163-021-91 | CERAMIC CHIP\T0.01MF | 10% | 50V | |
| C1004 | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C1004 | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C1005 | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C1005 | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C1006 | 1-163-021-91 | CERAMIC CHIP\T0.01MF | 10% | 50V | |
| C1006 | 1-163-021-91 | CERAMIC CHIP\T0.01MF | 10% | 50V | |
| C1007 | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C1007 | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C1008 | 1-126-963-11 | ELECT\T4.7MF | 20% | 50V | |
| C1008 | 1-126-963-11 | ELECT\T4.7MF | 20% | 50V | |
| C1009 | 1-126-964-11 | ELECT\T10MF | 20% | 50V | |
| C1009 | 1-126-964-11 | ELECT\T10MF | 20% | 50V | |
| C1010 | 1-137-370-11 | MYLAR\T0.01MF | 5% | 50V | |
| C1010 | 1-137-370-11 | MYLAR\T0.01MF | 5% | 50V | |
| C1011 | 1-163-011-11 | CERAMIC CHIP\T0.0015MF | 10% | 50V | |
| C1011 | 1-163-011-11 | CERAMIC CHIP\T0.0015MF | 10% | 50V | |
| C1012 | 1-163-011-11 | CERAMIC CHIP\T0.0015MF | 10% | 50V | |
| C1012 | 1-163-011-11 | CERAMIC CHIP\T0.0015MF | 10% | 50V | |
| C1013 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C1013 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C1014 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |
| C1014 | 1-163-031-11 | CERAMIC CHIP\T0.01MF | | | 50V |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| C1015 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C1015 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C1016 | 1-104-664-11 | ELECT\T47MF | 20% | 16V | |
| C1016 | 1-104-664-11 | ELECT\T47MF | 20% | 16V | |
| C1017 | 1-126-963-11 | ELECT\T4.7MF | 20% | 50V | |
| C1017 | 1-126-963-11 | ELECT\T4.7MF | 20% | 50V | |
| C1019 | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C1019 | 1-104-664-11 | ELECT\T47MF | 20% | 10V | |
| C1020 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C1020 | 1-126-960-11 | ELECT\T1MF | 20% | 50V | |
| C1021 | 1-126-964-11 | ELECT\T10MF | 20% | 50V | |
| C1021 | 1-126-964-11 | ELECT\T10MF | 20% | 50V | |
| C1104 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C1104 | 1-163-038-91 | CERAMIC CHIP\T0.1MF | | | 25V |
| C1108 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C1108 | 1-164-346-11 | CERAMIC CHIP\T1MF | | | 16V |
| C1110 | 1-128-551-11 | ELECT\T22MF | 20% | 25V | |
| C1110 | 1-128-551-11 | ELECT\T22MF | 20% | 25V | |
| C1111 | 1-128-551-11 | ELECT\T22MF | 20% | 25V | |
| C1111 | 1-128-551-11 | ELECT\T22MF | 20% | 25V | |
| | | <CONNECTOR> | | | |
| CN001 | 1-569-937-11 | SOCKET, CONNECTOR 21P | | | |
| CN001 | 1-569-937-11 | SOCKET, CONNECTOR 21P | | | |
| CN002 * | 1-569-930-11 | SOCKET, CONNECTOR 13P | | | |
| CN002 * | 1-569-930-11 | SOCKET, CONNECTOR 13P | | | |
| CN004 | 1-784-038-11 | CONNECTOR, BOARD TO BOARD 9P | | | |
| CN004 | 1-784-038-11 | CONNECTOR, BOARD TO BOARD 9P | | | |
| CN251 * | 1-564-506-11 | PLUG, CONNECTOR 3P | | | |
| CN251 * | 1-564-506-11 | PLUG, CONNECTOR 3P | | | |
| CN401 * | 1-569-926-11 | SOCKET, CONNECTOR 7P | | | |
| CN403 | 1-779-723-11 | CONNECTOR, BOARD TO BOARD 9P | | | |
| CN403 | 1-779-723-11 | CONNECTOR, BOARD TO BOARD 9P | | | |
| CN404 * | 1-766-716-11 | CONNECTOR, BOARD TO BOARD 3P | | | |
| CN404 * | 1-766-716-11 | CONNECTOR, BOARD TO BOARD 3P | | | |
| CN701 * | 1-695-331-31 | PIN, CONNECTOR (PC BOARD) 8P | | | |
| CN701 * | 1-695-331-31 | PIN, CONNECTOR (PC BOARD) 8P | | | |
| CN702 * | 1-560-892-00 | PIN, CONNECTOR 4P | | | |
| CN702 * | 1-560-892-00 | PIN, CONNECTOR 4P | | | |
| CN1001* | 1-564-506-11 | PLUG, CONNECTOR 3P | | | |
| CN1001* | 1-564-506-11 | PLUG, CONNECTOR 3P | | | |
| CN1002* | 1-564-509-11 | PLUG, CONNECTOR 6P | | | |
| CN1002* | 1-564-509-11 | PLUG, CONNECTOR 6P | | | |
| CN1003* | 1-564-511-11 | PLUG, CONNECTOR 8P | | | |
| CN1003* | 1-564-511-11 | PLUG, CONNECTOR 8P | | | |
| CN1004 | 1-778-226-21 | CONNECTOR, BOARD TO BOARD 6P | | | |
| CN1004 | 1-778-226-21 | CONNECTOR, BOARD TO BOARD 6P | | | |
| | | <DIODE> | | | |
| D001 | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D002 | 8-719-921-54 | DIODE MTZJ-6.2B | | | |
| D004 | 8-719-921-54 | DIODE MTZJ-6.2B | | | |
| D005 | 8-719-981-99 | DIODE MTZJ-3.3 | | | |
| D006 | 8-719-109-84 | DIODE RD5.1ESB1 | | | |
| D007 | 8-719-911-19 | DIODE 1SS119-25 | | | |
| D201 | 8-719-921-54 | DIODE MTZJ-6.2B | | | |
| D202 | 8-719-921-54 | DIODE MTZJ-6.2B | | | |

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| D251 | 8-719-921-54 | DIODE MTZJ-6.2B | |
| D252 | 8-719-921-54 | DIODE MTZJ-6.2B | |
| D253 | 8-719-921-54 | DIODE MTZJ-6.2B | |
| D254 | 8-719-921-54 | DIODE MTZJ-6.2B | |
| D402 | 8-719-911-19 | DIODE 1SS119-25 | |
| D403 | 8-719-200-82 | DIODE 11ES2 | |
| D405 | 8-719-200-82 | DIODE 11ES2 | |
| D406 | 8-719-200-82 | DIODE 11ES2 | |
| D451 | 8-719-048-26 | DIODE GL528V1 | |
| D1101 | 8-719-921-54 | DIODE MTZJ-6.2B | |
| D1103 | 8-719-921-54 | DIODE MTZJ-6.2B | |
| D1105 | 8-719-923-60 | DIODE MTZJ-T-77-9.1A | |
| D1110 | 8-719-921-54 | DIODE MTZJ-6.2B | |
| D1117 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D1118 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D1119 | 8-719-991-33 | DIODE 1SS133T-77 | |
| | | <IC> | |
| IC001 | 8-752-912-88 | IC CXP85460-226Q | |
| IC002 | 8-759-527-77 | IC M24C16-MN6T | |
| IC003 | 8-759-510-43 | IC PST572C | |
| IC201 | 8-759-442-73 | IC TDA7494 | |
| IC401 | 8-759-353-59 | IC LB1643 | |
| IC402 | 8-752-906-47 | IC CXP87852-061Q (KV-VF14M77) | |
| IC402 | 8-752-906-48 | IC CXP87852-062Q (Except KV-VF14M77) | |
| IC403 | 8-759-702-02 | IC NJM062M | |
| IC404 | 8-759-510-73 | IC BA10393F-E2 | |
| IC405 | 8-759-438-83 | IC BA6305F-E2 | |
| IC701 | 8-759-357-84 | IC HA118295NT | |
| IC801 | 8-759-439-51 | IC LC89978M-TE-L | |
| IC802 | 8-759-492-90 | IC LA71504M-MPB | |
| IC901 | 8-752-081-33 | IC CXA2089Q | |
| IC1001 | 8-759-499-30 | IC BA7755AF-E2 | |
| IC1101 | 8-174-134-00 | HYB IC SBX1981-11P | |
| | | <JACK> | |
| J1101 | 1-779-205-11 | JACK, PIN 2P | |
| J1101 | 1-779-205-11 | JACK, PIN 2P | |
| J1102 | 1-568-267-21 | JACK | |
| J1102 | 1-568-267-21 | JACK | |
| | | <CHIP CONDUCTOR> | |
| JR101 | 1-216-295-91 | SHORT | 0 |
| JR101 | 1-216-295-91 | SHORT | 0 |
| JR102 | 1-216-295-91 | SHORT | 0 |
| JR102 | 1-216-295-91 | SHORT | 0 |
| JR103 | 1-216-295-91 | SHORT | 0 |
| JR103 | 1-216-295-91 | SHORT | 0 |
| JR104 | 1-216-295-91 | SHORT | 0 |
| JR104 | 1-216-295-91 | SHORT | 0 |
| JR105 | 1-216-295-91 | SHORT | 0 |
| JR105 | 1-216-295-91 | SHORT | 0 |
| JR106 | 1-216-295-91 | SHORT | 0 |
| JR106 | 1-216-295-91 | SHORT | 0 |
| JR107 | 1-216-295-91 | SHORT | 0 |

# MA10

| REF. NO. | PART NO. | DESCRIPTION | | REMARK |
|---|---|---|---|---|
| JR107 | 1-216-295-91 | SHORT | 0 | |
| JR108 | 1-216-295-91 | SHORT | 0 | |
| JR108 | 1-216-295-91 | SHORT | 0 | |
| JR109 | 1-216-295-91 | SHORT | 0 | |
| JR109 | 1-216-295-91 | SHORT | 0 | |
| JR111 | 1-216-295-91 | SHORT | 0 | |
| JR111 | 1-216-295-91 | SHORT | 0 | |
| JR115 | 1-216-295-91 | SHORT | 0 | |
| JR115 | 1-216-295-91 | SHORT | 0 | |
| JR116 | 1-216-295-91 | SHORT | 0 | |
| JR116 | 1-216-295-91 | SHORT | 0 | |
| JR119 | 1-216-295-91 | SHORT | 0 | |
| JR119 | 1-216-295-91 | SHORT | 0 | |
| JR120 | 1-216-295-91 | SHORT | 0 | |
| JR120 | 1-216-295-91 | SHORT | 0 | |
| JR121 | 1-216-295-91 | SHORT | 0 | |
| JR121 | 1-216-295-91 | SHORT | 0 | |
| JR122 | 1-216-295-91 | SHORT | 0 | |
| JR122 | 1-216-295-91 | SHORT | 0 | |
| JR123 | 1-216-295-91 | SHORT | 0 | |
| JR123 | 1-216-295-91 | SHORT | 0 | |
| JR124 | 1-216-295-91 | SHORT | 0 | |
| JR124 | 1-216-295-91 | SHORT | 0 | |
| JR402 | 1-216-295-91 | SHORT | 0 | |
| JR402 | 1-216-295-91 | SHORT | 0 | |
| JR403 | 1-216-295-91 | SHORT | 0 | |
| JR403 | 1-216-295-91 | SHORT | 0 | |
| | | <COIL> | | |
| L001 | 1-469-013-31 | INDUCTOR | 18UH | |
| L001 | 1-469-013-31 | INDUCTOR | 18UH | |
| L002 | 1-410-509-11 | INDUCTOR | 10UH | |
| L002 | 1-410-509-11 | INDUCTOR | 10UH | |
| L004 | 1-414-856-11 | INDUCTOR | 10UH | |
| L004 | 1-414-856-11 | INDUCTOR | 10UH | |
| L402 | 1-410-509-11 | INDUCTOR | 10UH | |
| L402 | 1-410-509-11 | INDUCTOR | 10UH | |
| L403 | 1-414-856-11 | INDUCTOR | 10UH | |
| L403 | 1-414-856-11 | INDUCTOR | 10UH | |
| L431 | 1-410-509-11 | INDUCTOR | 10UH | |
| L431 | 1-410-509-11 | INDUCTOR | 10UH | |
| L703 | 1-414-857-11 | INDUCTOR | 100UH | |
| L703 | 1-414-857-11 | INDUCTOR | 100UH | |
| L704 | 1-414-857-11 | INDUCTOR | 100UH | |
| L704 | 1-414-857-11 | INDUCTOR | 100UH | |
| L801 | 1-410-439-11 | INDUCTOR | 470UH | |
| L801 | 1-410-439-11 | INDUCTOR | 470UH | |
| L803 | 1-408-977-21 | INDUCTOR | 39UH | |
| L803 | 1-408-977-21 | INDUCTOR | 39UH | |
| L804 | 1-408-977-21 | INDUCTOR | 39UH | |
| L804 | 1-408-977-21 | INDUCTOR | 39UH | |
| L808 | 1-414-184-41 | INDUCTOR | 15UH | |
| L808 | 1-414-184-41 | INDUCTOR | 15UH | |
| L809 | 1-414-857-11 | INDUCTOR | 100UH | |
| L809 | 1-414-857-11 | INDUCTOR | 100UH | |
| L811 | 1-414-185-41 | INDUCTOR | 22UH | |

| REF. NO. | PART NO. | DESCRIPTION | | REMARK |
|---|---|---|---|---|
| L811 | 1-414-185-41 | INDUCTOR | 22UH | |
| L812 | 1-414-185-41 | INDUCTOR | 22UH | |
| L812 | 1-414-185-41 | INDUCTOR | 22UH | |
| L813 | 1-414-187-11 | INDUCTOR | 47UH | |
| L813 | 1-414-187-11 | INDUCTOR | 47UH | |
| L815 | 1-414-190-31 | INDUCTOR | 120UH | |
| L815 | 1-414-190-31 | INDUCTOR | 120UH | |
| L1001 | 1-414-857-11 | INDUCTOR | 100UH | |
| L1001 | 1-414-857-11 | INDUCTOR | 100UH | |
| L1002 | 1-414-857-11 | INDUCTOR | 100UH | |
| L1002 | 1-414-857-11 | INDUCTOR | 100UH | |
| L1003 | 1-420-872-00 | COIL, AIR CORE | | |
| L1003 | 1-420-872-00 | COIL, AIR CORE | | |
| L1004 | 1-414-187-11 | INDUCTOR | 47UH | |
| L1004 | 1-414-187-11 | INDUCTOR | 47UH | |
| | | <PHOTO COUPLER> | | |
| PH451 | 8-749-013-23 | PHOTO INTERRUPTER GP3S120 | | |
| PH451 | 8-749-013-23 | PHOTO INTERRUPTER GP3S120 | | |
| PH452 | 8-749-013-23 | PHOTO INTERRUPTER GP3S120 | | |
| PH452 | 8-749-013-23 | PHOTO INTERRUPTER GP3S120 | | |
| | | <TRANSISTOR> | | |
| Q001 | 8-729-216-22 | TRANSISTOR 2SA1162-G | | |
| Q002 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q003 | 8-729-421-22 | TRANSISTOR UN2211 | | |
| Q009 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q201 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q402 | 8-729-424-18 | TRANSISTOR UN2113 | | |
| Q451 | 8-729-281-53 | TRANSISTOR 2SC1815-GR | | |
| Q452 | 8-729-042-88 | TRANSISTOR RPT-37PB3F | | |
| Q453 | 8-729-042-88 | TRANSISTOR RPT-37PB3F | | |
| Q701 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q801 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q803 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q808 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q809 | 8-729-421-19 | TRANSISTOR UN2213 | | |
| Q812 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q815 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q821 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q823 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q824 | 8-729-216-22 | TRANSISTOR 2SA1162-G | | |
| Q825 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q830 | 8-729-216-22 | TRANSISTOR 2SA1162-G | | |
| Q901 | 8-729-216-22 | TRANSISTOR 2SA1162-G | | |
| Q902 | 8-729-216-22 | TRANSISTOR 2SA1162-G | | |
| Q1001 | 8-729-802-91 | TRANSISTOR 2SD879 | | |
| Q1002 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| Q1101 | 8-729-422-27 | TRANSISTOR 2SD601A-Q | | |
| | | <RESISTOR> | | |
| R003 | 1-216-049-91 | RES,CHIP | 1K 5% 1/10W | |
| R003 | 1-216-049-91 | RES,CHIP | 1K 5% 1/10W | |
| R005 | 1-216-089-91 | RES,CHIP | 47K 5% 1/10W | |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R005 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R007 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W |
| R007 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W |
| R008 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R008 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R009 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R009 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R010 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R010 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R011 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R011 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R012 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R012 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R013 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R013 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R014 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R014 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R015 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R015 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R016 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R016 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R017 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R017 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R018 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R018 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R020 | 1-216-067-00 | RES,CHIP | 5.6K | 5% | 1/10W |
| R020 | 1-216-067-00 | RES,CHIP | 5.6K | 5% | 1/10W |
| R021 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R021 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R022 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R022 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R024 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R024 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R025 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R025 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R027 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R027 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R028 | 1-216-295-91 | SHORT | 0 | | |
| R028 | 1-216-295-91 | SHORT | 0 | | |
| R029 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R029 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R030 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R030 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R031 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R031 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R032 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R032 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R033 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R033 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R034 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R034 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R035 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R035 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R036 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R036 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R037 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R037 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R038 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R038 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R039 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R039 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R040 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R040 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R041 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R041 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R042 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R042 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R043 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R043 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R044 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R044 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R045 | 1-216-295-91 | SHORT | 0 | | |
| R045 | 1-216-295-91 | SHORT | 0 | | |
| R046 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R046 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R047 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R047 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R048 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R048 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R051 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R051 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R052 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R052 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R053 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R053 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R054 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R054 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R055 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R055 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R056 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R056 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R057 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R057 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R058 | 1-216-039-00 | RES,CHIP | 390 | 5% | 1/10W |
| R058 | 1-216-039-00 | RES,CHIP | 390 | 5% | 1/10W |
| R059 | 1-216-075-00 | RES,CHIP | 12K | 5% | 1/10W |
| R059 | 1-216-075-00 | RES,CHIP | 12K | 5% | 1/10W |
| R060 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R060 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R061 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R061 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R062 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R062 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R063 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R063 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R064 | 1-216-121-91 | RES,CHIP | 1M | 5% | 1/10W |
| R064 | 1-216-121-91 | RES,CHIP | 1M | 5% | 1/10W |
| R065 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R065 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R066 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R066 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R067 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R067 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R068 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |

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| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R068 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R070 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R070 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R073 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R073 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R075 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R075 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R076 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R076 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R077 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R077 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R078 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R078 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R084 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R084 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R085 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R085 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R096 | 1-216-069-00 | RES,CHIP | 6.8K | 5% | 1/10W |
| R096 | 1-216-069-00 | RES,CHIP | 6.8K | 5% | 1/10W |
| R097 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R097 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R098 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R098 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R099 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R099 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R101 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R101 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R204 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R204 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R205 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R205 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R206 | 1-216-109-00 | RES,CHIP | 330K | 5% | 1/10W |
| R206 | 1-216-109-00 | RES,CHIP | 330K | 5% | 1/10W |
| R210 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R210 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R211 | 1-216-071-00 | RES,CHIP | 8.2K | 5% | 1/10W |
| R211 | 1-216-071-00 | RES,CHIP | 8.2K | 5% | 1/10W |
| R212 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R212 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R215 | 1-216-295-91 | SHORT | 0 | | |
| R215 | 1-216-295-91 | SHORT | 0 | | |
| R216 | 1-249-385-11 | CARBON | 2.2 | 5% | 1/4W F |
| R216 | 1-249-385-11 | CARBON | 2.2 | 5% | 1/4W F |
| R218 | 1-216-105-91 | RES,CHIP | 220K | 5% | 1/10W |
| R218 | 1-216-105-91 | RES,CHIP | 220K | 5% | 1/10W |
| R219 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R219 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R220 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R220 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R401 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R401 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R402 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R402 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R403 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R403 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R404 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R404 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R405 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R405 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R406 | 1-216-053-00 | RES,CHIP | 1.5K | 5% | 1/10W |
| R406 | 1-216-053-00 | RES,CHIP | 1.5K | 5% | 1/10W |
| R407 | 1-216-053-00 | RES,CHIP | 1.5K | 5% | 1/10W |
| R407 | 1-216-053-00 | RES,CHIP | 1.5K | 5% | 1/10W |
| R408 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R408 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R409 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R409 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R410 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R410 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R411 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R411 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R412 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R412 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R414 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R414 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R415 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R415 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R416 | 1-216-105-91 | RES,CHIP | 220K | 5% | 1/10W |
| R416 | 1-216-105-91 | RES,CHIP | 220K | 5% | 1/10W |
| R417 | 1-216-111-00 | RES,CHIP | 390K | 5% | 1/10W |
| R417 | 1-216-111-00 | RES,CHIP | 390K | 5% | 1/10W |
| R418 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R418 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R419 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R419 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R420 | 1-216-117-00 | RES,CHIP | 680K | 5% | 1/10W |
| R420 | 1-216-117-00 | RES,CHIP | 680K | 5% | 1/10W |
| R421 | 1-216-079-00 | RES,CHIP | 18K | 5% | 1/10W |
| R421 | 1-216-079-00 | RES,CHIP | 18K | 5% | 1/10W |
| R422 | 1-216-689-11 | RES,CHIP | 39K | 5% | 1/10W |
| R422 | 1-216-689-11 | RES,CHIP | 39K | 5% | 1/10W |
| R423 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R423 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R424 | 1-216-675-91 | METAL CHIP | 10K | 0.50% | 1/10W |
| R424 | 1-216-675-91 | METAL CHIP | 10K | 0.50% | 1/10W |
| R425 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R425 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R426 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R426 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R427 | 1-216-103-00 | RES,CHIP | 180K | 5% | 1/10W |
| R427 | 1-216-103-00 | RES,CHIP | 180K | 5% | 1/10W |
| R428 | 1-216-675-91 | METAL CHIP | 10K | 0.50% | 1/10W |
| R428 | 1-216-675-91 | METAL CHIP | 10K | 0.50% | 1/10W |
| R429 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R429 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R430 | 1-216-037-00 | RES,CHIP | 330 | 5% | 1/10W |
| R430 | 1-216-037-00 | RES,CHIP | 330 | 5% | 1/10W |
| R432 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R432 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R433 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R433 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R435 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R435 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R436 | 1-216-043-91 | RES,CHIP | 560 | 5% | 1/10W |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R436 | 1-216-043-91 | RES,CHIP | 560 | 5% | 1/10W |
| R437 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R437 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R438 | 1-216-295-91 | SHORT | 0 | | |
| R438 | 1-216-295-91 | SHORT | 0 | | |
| R439 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R439 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R440 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R440 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R441 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R441 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R442 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R442 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R443 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R443 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R444 | 1-216-295-91 | SHORT | 0 | | |
| R444 | 1-216-295-91 | SHORT | 0 | | |
| R445 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R445 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R446 | 1-216-075-00 | RES,CHIP | 12K | 5% | 1/10W |
| R446 | 1-216-075-00 | RES,CHIP | 12K | 5% | 1/10W |
| R447 | 1-216-081-00 | RES,CHIP | 22K | 5% | 1/10W |
| R447 | 1-216-081-00 | RES,CHIP | 22K | 5% | 1/10W |
| R448 | 1-216-075-00 | RES,CHIP | 12K | 5% | 1/10W |
| R448 | 1-216-075-00 | RES,CHIP | 12K | 5% | 1/10W |
| R449 | 1-216-081-00 | RES,CHIP | 22K | 5% | 1/10W |
| R449 | 1-216-081-00 | RES,CHIP | 22K | 5% | 1/10W |
| R450 | 1-216-077-91 | RES,CHIP | 15K | 5% | 1/10W |
| R450 | 1-216-077-91 | RES,CHIP | 15K | 5% | 1/10W |
| R451 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R451 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R452 | 1-249-400-11 | CARBON | 39 | 5% | 1/4W |
| R452 | 1-249-400-11 | CARBON | 39 | 5% | 1/4W |
| R453 | 1-249-400-11 | CARBON | 39 | 5% | 1/4W |
| R453 | 1-249-400-11 | CARBON | 39 | 5% | 1/4W |
| R454 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W |
| R454 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W |
| R455 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R455 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R456 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R456 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R457 | 1-216-085-00 | RES,CHIP | 33K | 5% | 1/10W |
| R457 | 1-216-085-00 | RES,CHIP | 33K | 5% | 1/10W |
| R458 | 1-216-085-00 | RES,CHIP | 33K | 5% | 1/10W |
| R458 | 1-216-085-00 | RES,CHIP | 33K | 5% | 1/10W |
| R459 | 1-216-085-00 | RES,CHIP | 33K | 5% | 1/10W |
| R459 | 1-216-085-00 | RES,CHIP | 33K | 5% | 1/10W |
| R460 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R460 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R461 | 1-216-085-00 | RES,CHIP | 33K | 5% | 1/10W |
| R461 | 1-216-085-00 | RES,CHIP | 33K | 5% | 1/10W |
| R465 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R465 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R466 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R466 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R467 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R467 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R468 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R468 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R469 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R469 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R470 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R470 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R471 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R471 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R472 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R472 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R473 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R473 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R474 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R474 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R476 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R476 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R477 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R477 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R478 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R478 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R479 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R479 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R480 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R480 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R481 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R481 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R484 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R484 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R487 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R487 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R701 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R701 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R702 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R702 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R705 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R705 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R706 | 1-216-081-00 | RES,CHIP | 22K | 5% | 1/10W |
| R706 | 1-216-081-00 | RES,CHIP | 22K | 5% | 1/10W |
| R707 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R707 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R708 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R708 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R709 | 1-216-061-00 | RES,CHIP | 3.3K | 5% | 1/10W |
| R709 | 1-216-061-00 | RES,CHIP | 3.3K | 5% | 1/10W |
| R710 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R710 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R711 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R711 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R712 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R712 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R714 | 1-216-295-91 | SHORT | 0 | | |
| R714 | 1-216-295-91 | SHORT | 0 | | |
| R716 | 1-216-295-91 | SHORT | 0 | | |
| R716 | 1-216-295-91 | SHORT | 0 | | |
| R801 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R801 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R803 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R803 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R810 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |

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| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R810 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R811 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R811 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R813 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R813 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R814 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R814 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R815 | 1-247-815-91 | CARBON | 220 | 5% | 1/4W |
| R815 | 1-247-815-91 | CARBON | 220 | 5% | 1/4W |
| R819 | 1-216-081-00 | RES,CHIP | 22K | 5% | 1/10W |
| R819 | 1-216-081-00 | RES,CHIP | 22K | 5% | 1/10W |
| R820 | 1-216-081-00 | RES,CHIP | 22K | 5% | 1/10W |
| R820 | 1-216-081-00 | RES,CHIP | 22K | 5% | 1/10W |
| R823 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R823 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R824 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R824 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R827 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R827 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R829 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R829 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R831 | 1-216-295-91 | SHORT | 0 | | |
| R831 | 1-216-295-91 | SHORT | 0 | | |
| R833 | 1-216-295-91 | SHORT | 0 | | |
| R833 | 1-216-295-91 | SHORT | 0 | | |
| R834 | 1-216-295-91 | SHORT | 0 | | |
| R834 | 1-216-295-91 | SHORT | 0 | | |
| R835 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R835 | 1-216-041-00 | RES,CHIP | 470 | 5% | 1/10W |
| R837 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R837 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R838 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R838 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R839 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R839 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R840 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R840 | 1-216-033-00 | RES,CHIP | 220 | 5% | 1/10W |
| R841 | 1-216-069-00 | RES,CHIP | 6.8K | 5% | 1/10W |
| R841 | 1-216-069-00 | RES,CHIP | 6.8K | 5% | 1/10W |
| R843 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R843 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R845 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R845 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R847 | 1-216-295-91 | SHORT | 0 | | |
| R847 | 1-216-295-91 | SHORT | 0 | | |
| R848 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R848 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R849 | 1-216-295-91 | SHORT | 0 | | |
| R849 | 1-216-295-91 | SHORT | 0 | | |
| R850 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R850 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R852 | 1-216-053-00 | RES,CHIP | 1.5K | 5% | 1/10W |
| R852 | 1-216-053-00 | RES,CHIP | 1.5K | 5% | 1/10W |
| R855 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R855 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R856 | 1-216-071-00 | RES,CHIP | 8.2K | 5% | 1/10W |
| R856 | 1-216-071-00 | RES,CHIP | 8.2K | 5% | 1/10W |

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R857 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R857 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R858 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R858 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R860 | 1-216-061-00 | RES,CHIP | 3.3K | 5% | 1/10W |
| R860 | 1-216-061-00 | RES,CHIP | 3.3K | 5% | 1/10W |
| R861 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R861 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R863 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R863 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R864 | 1-216-295-91 | SHORT | 0 | | |
| R864 | 1-216-295-91 | SHORT | 0 | | |
| R865 | 1-216-295-91 | SHORT | 0 | | |
| R865 | 1-216-295-91 | SHORT | 0 | | |
| R867 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R867 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R869 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R869 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R870 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R870 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R873 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R873 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R875 | 1-216-295-91 | SHORT | 0 | | |
| R875 | 1-216-295-91 | SHORT | 0 | | |
| R881 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R881 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R882 | 1-216-689-11 | RES,CHIP | 39K | 5% | 1/10W |
| R882 | 1-216-689-11 | RES,CHIP | 39K | 5% | 1/10W |
| R883 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R883 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R885 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R885 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R901 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R901 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R902 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R902 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R903 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R903 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R905 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R905 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R909 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R909 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R911 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R911 | 1-216-097-91 | RES,CHIP | 100K | 5% | 1/10W |
| R913 | 1-216-295-91 | SHORT | 0 | | |
| R913 | 1-216-295-91 | SHORT | 0 | | |
| R914 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R914 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R916 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R916 | 1-216-057-00 | RES,CHIP | 2.2K | 5% | 1/10W |
| R917 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R917 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R918 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R918 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R919 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R919 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R920 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R920 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

# MA10

| REF. NO. | PART NO. | DESCRIPTION | | | REMARK |
|---|---|---|---|---|---|
| R926 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R926 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R928 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R928 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R931 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R931 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R934 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R934 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R1002 | 1-249-408-11 | CARBON | 180 | 5% | 1/4W |
| R1002 | 1-249-408-11 | CARBON | 180 | 5% | 1/4W |
| R1003 | 1-249-381-11 | CARBON | 1 | 5% | 1/4W |
| R1003 | 1-249-381-11 | CARBON | 1 | 5% | 1/4W |
| R1004 | 1-216-063-91 | RES,CHIP | 3.9K | 5% | 1/10W |
| R1004 | 1-216-063-91 | RES,CHIP | 3.9K | 5% | 1/10W |
| R1005 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W |
| R1005 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W |
| R1006 | 1-216-075-00 | RES,CHIP | 12K | 5% | 1/10W |
| R1006 | 1-216-075-00 | RES,CHIP | 12K | 5% | 1/10W |
| R1007 | 1-216-079-00 | RES,CHIP | 18K | 5% | 1/10W |
| R1007 | 1-216-079-00 | RES,CHIP | 18K | 5% | 1/10W |
| R1008 | 1-216-035-00 | RES,CHIP | 270 | 5% | 1/10W |
| R1008 | 1-216-035-00 | RES,CHIP | 270 | 5% | 1/10W |
| R1010 | 1-216-109-00 | RES,CHIP | 330K | 5% | 1/10W |
| R1010 | 1-216-109-00 | RES,CHIP | 330K | 5% | 1/10W |
| R1011 | 1-216-069-00 | RES,CHIP | 6.8K | 5% | 1/10W |
| R1011 | 1-216-069-00 | RES,CHIP | 6.8K | 5% | 1/10W |
| R1012 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R1012 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R1013 | 1-216-079-00 | RES,CHIP | 18K | 5% | 1/10W |
| R1013 | 1-216-079-00 | RES,CHIP | 18K | 5% | 1/10W |
| R1014 | 1-216-053-00 | RES,CHIP | 1.5K | 5% | 1/10W |
| R1014 | 1-216-053-00 | RES,CHIP | 1.5K | 5% | 1/10W |
| R1015 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R1015 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R1016 | 1-216-075-00 | RES,CHIP | 12K | 5% | 1/10W |
| R1016 | 1-216-075-00 | RES,CHIP | 12K | 5% | 1/10W |
| R1017 | 1-249-426-11 | CARBON | 5.6K | 5% | 1/4W |
| R1017 | 1-249-426-11 | CARBON | 5.6K | 5% | 1/4W |
| R1018 | 1-216-061-00 | RES,CHIP | 3.3K | 5% | 1/10W |
| R1018 | 1-216-061-00 | RES,CHIP | 3.3K | 5% | 1/10W |
| R1019 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R1019 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R1020 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R1020 | 1-216-025-91 | RES,CHIP | 100 | 5% | 1/10W |
| R1023 | 1-216-067-00 | RES,CHIP | 5.6K | 5% | 1/10W |
| R1023 | 1-216-067-00 | RES,CHIP | 5.6K | 5% | 1/10W |
| R1024 | 1-216-093-91 | RES,CHIP | 68K | 5% | 1/10W |
| R1024 | 1-216-093-91 | RES,CHIP | 68K | 5% | 1/10W |
| R1025 | 1-216-129-00 | RES,CHIP | 2.2M | 5% | 1/10W |
| R1025 | 1-216-129-00 | RES,CHIP | 2.2M | 5% | 1/10W |
| R1101 | 1-216-295-91 | SHORT | 0 | | |
| R1101 | 1-216-295-91 | SHORT | 0 | | |
| R1102 | 1-216-067-00 | RES,CHIP | 5.6K | 5% | 1/10W |
| R1102 | 1-216-067-00 | RES,CHIP | 5.6K | 5% | 1/10W |
| R1103 | 1-216-022-00 | RES,CHIP | 75 | 5% | 1/10W |
| R1103 | 1-216-022-00 | RES,CHIP | 75 | 5% | 1/10W |
| R1106 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R1106 | 1-216-089-91 | RES,CHIP | 47K | 5% | 1/10W |
| R1107 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R1107 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R1109 | 1-216-079-00 | RES,CHIP | 18K | 5% | 1/10W |
| R1109 | 1-216-079-00 | RES,CHIP | 18K | 5% | 1/10W |
| R1111 | 1-216-067-00 | RES,CHIP | 5.6K | 5% | 1/10W |
| R1111 | 1-216-067-00 | RES,CHIP | 5.6K | 5% | 1/10W |
| R1112 | 1-216-061-00 | RES,CHIP | 3.3K | 5% | 1/10W |
| R1112 | 1-216-061-00 | RES,CHIP | 3.3K | 5% | 1/10W |
| R1113 | 1-216-061-00 | RES,CHIP | 3.3K | 5% | 1/10W |
| R1113 | 1-216-061-00 | RES,CHIP | 3.3K | 5% | 1/10W |
| R1114 | 1-216-051-00 | RES,CHIP | 1.2K | 5% | 1/10W |
| R1114 | 1-216-051-00 | RES,CHIP | 1.2K | 5% | 1/10W |
| R1115 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R1115 | 1-216-055-00 | RES,CHIP | 1.8K | 5% | 1/10W |
| R1116 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R1116 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R1117 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R1117 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R1119 | 1-216-295-91 | SHORT | 0 | | |
| R1119 | 1-216-295-91 | SHORT | 0 | | |
| R1128 | 1-216-037-00 | RES,CHIP | 330 | 5% | 1/10W |
| R1128 | 1-216-037-00 | RES,CHIP | 330 | 5% | 1/10W |
| R1129 | 1-216-037-00 | RES,CHIP | 330 | 5% | 1/10W |
| R1129 | 1-216-037-00 | RES,CHIP | 330 | 5% | 1/10W |
| R1132 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R1132 | 1-216-073-00 | RES,CHIP | 10K | 5% | 1/10W |
| R1133 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R1133 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R1134 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R1134 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R1135 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R1135 | 1-216-065-91 | RES,CHIP | 4.7K | 5% | 1/10W |
| R1136 | 1-216-051-00 | RES,CHIP | 1.2K | 5% | 1/10W |
| R1136 | 1-216-051-00 | RES,CHIP | 1.2K | 5% | 1/10W |
| R1137 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R1137 | 1-216-045-00 | RES,CHIP | 680 | 5% | 1/10W |
| R1138 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R1138 | 1-216-047-91 | RES,CHIP | 820 | 5% | 1/10W |
| R1139 | 1-216-093-91 | RES,CHIP | 68K | 5% | 1/10W |
| R1139 | 1-216-093-91 | RES,CHIP | 68K | 5% | 1/10W |
| R1140 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |
| R1140 | 1-216-049-91 | RES,CHIP | 1K | 5% | 1/10W |

<SWITCH>

| | | |
|---|---|---|
| S001 | 1-473-555-11 | ENCODER, ROTARY |
| S001 | 1-473-555-11 | ENCODER, ROTARY |
| S401 | 1-771-155-11 | SWITCH, ROTARY |
| S401 | 1-771-155-11 | SWITCH, ROTARY |
| S451 | 1-762-108-11 | SWITCH, PUSH (1 KEY) |
| S451 | 1-762-108-11 | SWITCH, PUSH (1 KEY) |
| S1101 | 1-571-032-11 | SWITCH, PUSH (1 KEY) |
| S1101 | 1-571-032-11 | SWITCH, PUSH (1 KEY) |
| S1102 | 1-570-577-11 | SWITCH, PUSH |
| S1102 | 1-570-577-11 | SWITCH, PUSH |

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| S1103 | 1-570-577-11 | SWITCH, PUSH | |
| S1103 | 1-570-577-11 | SWITCH, PUSH | |
| S1104 | 1-570-577-11 | SWITCH, PUSH | |
| S1104 | 1-570-577-11 | SWITCH, PUSH | |
| S1105 | 1-570-577-11 | SWITCH, PUSH | |
| S1105 | 1-570-577-11 | SWITCH, PUSH | |
| S1106 | 1-570-577-11 | SWITCH, PUSH | |
| S1106 | 1-570-577-11 | SWITCH, PUSH | |
| S1107 | 1-570-577-11 | SWITCH, PUSH | |
| S1107 | 1-570-577-11 | SWITCH, PUSH | |
| S1108 | 1-571-532-21 | SWITCH, TACTIL | |
| S1109 | 1-571-532-21 | SWITCH, TACTIL | |
| | | <TRANSFORMER> | |
| T1001 | 1-431-097-11 | TRANSFORMER, BIAS OSCILLATION | |
| T1001 | 1-431-097-11 | TRANSFORMER, BIAS OSCILLATION | |
| | | <CRYSTAL> | |
| X001 | 1-767-755-11 | VIBRATOR, CRYSTAL | |
| X001 | 1-767-755-11 | VIBRATOR, CRYSTAL | |
| X430 | 1-760-494-11 | VIBRATOR, CRYSTAL | |
| X430 | 1-760-494-11 | VIBRATOR, CRYSTAL | |
| X801 | 1-579-608-11 | VIBRATOR, CRYSTAL | |
| X801 | 1-579-608-11 | VIBRATOR, CRYSTAL | |
| X802 | 1-577-380-11 | VIBRATOR, CRYSTAL | |
| X802 | 1-577-380-11 | VIBRATOR, CRYSTAL | |

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ACCESSORIES AND PACKING MATERIALS
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| | | |
|---|---|---|
| | 3-866-053-22 | MANUAL, INSTRUCTION (KV-VF14M40) |
| | 3-866-053-12 | MANUAL, INSTRUCTION (KV-VF14M70) |
| | 3-866-053-32 | MANUAL, INSTRUCTION (KV-VF14M77) |
| * | 4-049-243-11 | BAG, PROTECTION |
| * | 4-073-513-01 | INDIVIDUAL CARTON |
| * | 4-073-514-01 | CUSHION (UPPER) (ASSY) |
| * | 4-073-515-01 | CUSHION (LOWER) (ASSY) |

**********

| REF. NO. | PART NO. | DESCRIPTION | REMARK |
|---|---|---|---|
| | | MISCELLANEOUS | |
| | | ********** | |
| ⚠ | 1-419-185-11 | COIL, DEGAUSSING | |
| | 1-452-032-00 | MAGNET,DISC | |
| ⚠ | 1-473-159-21 | CAP ASSY, HIGH-VOLTAGE | |
| | 1-529-474-11 | SPEAKER (5CM) | |
| | 1-759-453-11 | DRUM ASSY, DZH-89A | |
| ⚠ | 1-769-609-21 | CORD, POWER (WITH CONNECTOR) | |
| | 1-900-234-88 | CONNECTOR ASSY 7P | |
| | 1-900-244-04 | CONNECTOR ASSY , FLAT 21P | |
| | 1-900-244-71 | CONNECTOR ASSY, FLAT 13P | |
| ⚠ | 1-900-246-26 | LEAD ASSY, FOCUS | |
| | 1-900-246-27 | LEAD ASSY, G2 | |
| | 1-900-249-56 | CONNECTOR ASSY, MINI MICRO 5P | |
| | 1-900-249-57 | CONNECTOR ASSY, MINI MICRO 7P | |
| ⚠ | 8-451-401-11 | DEFLECTION YOKE (Y14RSA-S) | |
| ⚠ | 8-735-570-05 | PICTURE TUBE (A34LRG70X) | |

**********

REMOTE COMMANDER
**********

| | | |
|---|---|---|
| | 1-418-448-11 | REMOTE COMMANDER (RM-956) (KV-VF14M40/M70) |
| | 1-418-447-11 | REMOTE COMMANDER (RM-955)(KV-VF14M77) |
| | 9-882-043-01 | COVER BATTERY, REMOTE COMMANDER (RM-955/RM-956) |


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